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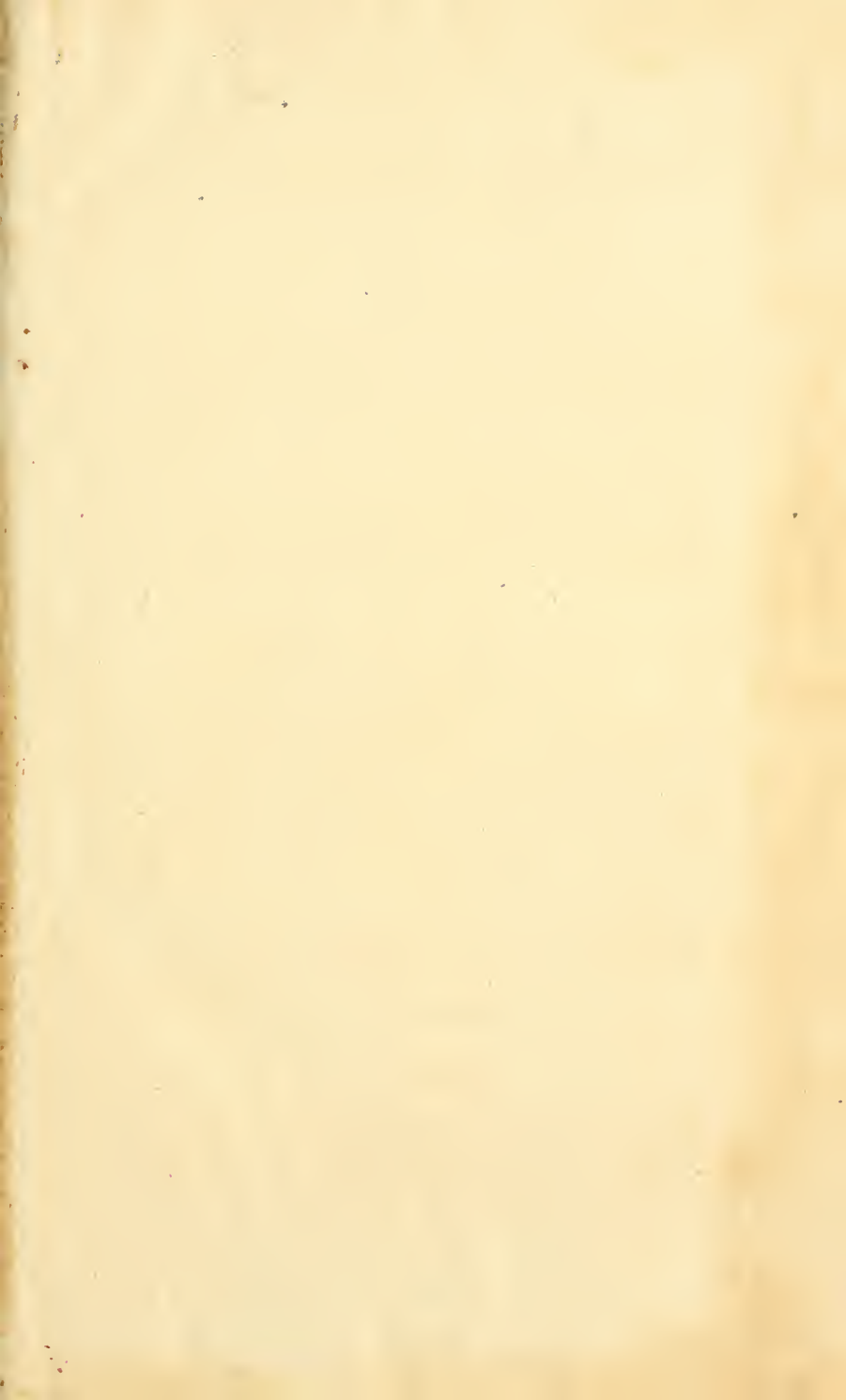
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PRACTICAL SURGERY:

CONTAINING THE

DESCRIPTION, CAUSES, AND TREATMENT

OF

EACH COMPLAINT;

TOGETHER WITH

THE MOST APPROVED METHODS OF OPERATING,

BY ROBERT WHITE, M.D.

LATE PRACTITIONER IN SURGERY.

THE SECOND EDITION,

CORRECTED AND ENLARGED.

LONDON:

PRINTED FOR T. CADELL, JUN. AND W. DAVIES, (SUCCESSORS
TO MR. CADELL,) IN THE STRAND.

.....

1796.

THE HISTORY OF THE

REIGN OF

CHARLES THE FIRST

IN WHICH ARE CONTAINED
THE
MOST
REMARKABLE
EVENTS
OF
HIS
REIGN
FROM
THE
BEGINNING
OF
HIS
MAYESTY'S
FIRST
JOURNEY
INTO
SCOTLAND
UNTIL
HIS
EXECUTION
AT
WHITECHURCH

BY
JAMES
HARRISON
OF
THE
MIDDLE
TEMPLE
ESQ;
AND
OF
THE
HONOURABLE
COMMONS
OF
ENGLAND
SERJEANT
AT
LAW
IN
PARLIAMENTS
AND
IN
THE
HIGH
COURT
OF
COMMONS
IN
THE
YEAR
OF
OUR
LORD
1649
AND
OF
THE
REIGN
OF
CHARLES
THE
FIRST
1649

TO THE READER.

THE many valuable works which have at different æras been published relating to the Practice of Surgery, may have been thought sufficient to communicate every necessary information upon that subject; still it must be acknowledged, that the great improvements made in the art, within the last thirty or forty years, have rendered the practical part so widely different from what has been handed down in the writings of former practitioners, as to give ample room for further explanations and remarks.

Much has been published upon the subject within that term; but some of the works are too voluminous and expensive; some treat of particular disorders only; and others are more attached to the improvement of operations and hypothetical invention, than made subservient to general practice; since it is very well understood, that experience and observation, together with a competent knowledge of anatomy, ought to be the leading principles of this excellent art.

There is without doubt a preliminary knowledge, which opens the mind to reflection, and is necessary towards improvement. One of our earliest Philosophers has declared, that the science of Medicine should be founded upon a true and active Natural Philosophy: allowing which axiom to be perfectly just, it is the business of every Student to be aware of the fanciful schemes and chimerical ideas of Theorists, whose systems may lead him into vain pursuits, and divert his attention from sound practical knowledge.

Human reason is evidently too weak to investigate the more mysterious course of nature; and the *modus operandi* is not so great an object of enquiry, provided the means employed be regularly attended with success. Indeed, the art of Surgery has little need of such aids;

NON TALI INGENIO —————

————— EGET —————

Those applications which are known most to assist, and least to interrupt the efforts of nature, are entitled to preference.—Common sense will in most instances be equal to the task of suggesting the means for relief; and reason and experience

perience will readily ascertain the propriety of using them.

For the more immediate benefit, then, of young practitioners, a systematic book of reference, as compendious as the nature of the subject would admit, formed from the general practice in its present cultivated state, and founded on positive facts, cannot surely be thought an useless performance. In the prosecution of it, the reader will readily imagine the necessary obligations which the author must be under to the ingenious and useful works of several eminent writers upon the different parts.

On these premises, the author introduces a plain, concise statement of the most rational practice; and has drawn up his account of it, in what he deems the most ready and eligible plan; by dividing it into general heads, and giving a regular description of each disorder, its causes, and mode of cure. And in order to render the work more complete, he has added a list of such topical and other remedies as are applicable to surgical cases.

The following articles were intended for the first edition, but, by particular accident, were unavoidably omitted; viz. Strains and Contusions, Inflammation and Abscess of the Liver,

and Lumbar or Psoas Abscess, Remarks de Necrofi, Pellier's Mode of treating the Cataract and Fistula Lachrymalis; Hernia Cystica, Nævi Materni, and Spina Bifida, are also additional.

It is to be feared that some inaccuracies have again escaped notice; yet the author flatters himself, that the candour with which the former edition has been received, will equally befriend the present. It may be further remarked, that many of the instances hinted at as declaratory of the treatment herein noticed, were under the management or direction of the author.

INTRODUCTION

SURGERY means that branch of the healing art which is employed in relieving or curing, by means of topical applications, and manual or mechanical operations: yet every one who is desirous of exercising the office of a Surgeon with propriety, should be well versed in anatomy and medicine. How wretchedly bad, therefore, must the mode of practice have been in former ages, when intrusted to the meanest quacks, and the most ignorant pretenders. But happily for human nature, this noble art has been rescued from such ignominious hands, by the Surgeons of the last, and this century; who, through their great industry and attention, have brought it to its present excellence.

The practice of Surgery is strongly connected with that of physic; insomuch, that in many cases, it is impossible to separate them; on which account, no just cause can be assigned why they should be considered as distinct pro-

vinces. Fashion and prejudice in this, as in all other sublunary matters, may bear great sway ; still, such unworthy influence apart, it becomes an indisputable fact, that good natural parts, a liberal education, and a well-grounded knowledge in anatomy and medicine, are all needful towards forming a complete Surgeon : and also that no physician can be perfect in Surgery, unless he has acquired practical skill. The lectures on *Anatomy, Chemistry, Natural Philosophy, the Materia Medica, Practice of Physic, Surgery, and Midwifery* are arrived at the greatest perfection in these kingdoms ; and the ardent zeal with which the student is instructed in all these important branches, gives him every opportunity of being well informed in the scientific part ; whilst, at the same time, what can be more convenient, or better adapted towards rendering him skilful in the practical parts, than the many charitable institutions for which this nation is so justly famed. Under such advantages, with adequate parts and application, one cannot conceive it by any means beyond the reach of a single mind, to acquire every branch of medical knowledge. Proofs of such skill and ability are to be met with in many parts of these kingdoms ; and it is not unlikely, that the different parts of the profession

feſſion will, in time, be more generally blended, in the Capital.

Systematic writers have divided and ſubdivided the art of Surgery into many parts, according to the different operations; if there be a real neceſſity for ſuch diviſions, they may all be comprized under the following general heads: *Syntheſis*, which comprehends divided or diſtant parts to be re-united; as in wounds, fractures, diſlocations, &c. *Diæreſis*, or the diviſion of parts either by incision, cautery, perforation, &c. and *Exæreſis*, which takes in the removal of morbid parts, or foreign bodies.

It has been generally thought proper, in the introductory part of a work of this kind, to acquaint the reader with the order in which the contents are digeſted; in addition therefore to what he is already apprized of in the addreſs, it will be neceſſary to obſerve, that it firſt treats of the *general* complaints, ſuch as *Inflammation*, and its conſequent *Tumours*, *Wounds*, *Ulcers*, *Fractures*, *Diſlocations*, &c. afterwards of thoſe which affect *particular* parts, together with the moſt approved methods of *operating* in each; and that he will find the *Prognoftics* and *Diagnoftics* either interwoven with the deſcription of the diſorder, or particularly ſpecified, according to the nature and importance of the ſubject.

It

It is here also customary to notice such instruments as are commonly necessary; but as to those which are required on particular occasions, reference may be had to the lists of the different makers: and it ought to be understood, that the inspection of a real instrument (which every young Surgeon has an opportunity of viewing, with all its various alterations and improvements, or supplying himself with, at the shops of the most noted makers, previous to leaving the hospitals) will afford a much more perfect idea, and more striking impression of its size, form, and use, than can be conceived from the imitative powers of the most correct engraving.

Those which are commonly necessary are, a small case of lancets, which ought to be neither too broad nor too narrow shouldered, nor too thin upon the blade; a pair of strait scissars, a spatula, forceps, pliers, and a hook, a strait and crooked scalpel, a strait double-edged scalpel, the eye and tent probe, a grooved director, small cautery, and a caustic quill; strait and crooked needles, of different sizes, ready-threaded; a salvatory, lint, and plasters, are also necessary portables. The Surgeon, thus equipped, is prepared for any sudden exigency. He ought also to carry about him a small phial with thebaic tincture, and another with wine of
anti-

antimony ; the use of which medicines, upon certain occasions, will be gaining time to the practitioner, and more immediate relief to the patient. The common necessaries for dressings are lint, plaster, compress, and bandage.

Lint, in form of what is called a pledgit, is generally the first dressing for wounds, either dry, or moistened with some vulnerary balsam, or lightly spread with cerate, or emollient ointment. It was formerly in great use as a tent ; but those applications are now properly considered as obstacles to the art of healing, and are confined to the preserving an opening for the discharge of matter from some large cavity, which on such occasions are mostly made with a piece of fine rag, of a flat form, and so as not to block up the whole of the aperture ; and in such cases as require dilatation, or in opening some obstructed passage : both which last are commonly brought about, by means of sponge or gentian root, bougie, or the like. Clean, soft, brown tow, as it is called, is sometimes a very good substitute for lint, particularly in those sores that discharge profusely.

Plaster, adhesive particularly ; linen cloth is spread with this for confining dressings, ripening indolent tumours, and forming the dry future. If the part on which the plaster is to be laid is hairy,

hairy, it must be shaved ; but in some habits, it may be remarked, that the most simple plaster will irritate and inflame the skin ; and in lieu thereof, a mild cerate with slight compress and bandage, may serve as retentives.

Compresses are most commonly made of soft linen rag, free from knots, seams, and loose threads, and shaped agreeably to the part, or purpose, to which they are applied ; they are used either dry, or moistened with some liquid application, in order to render the bandage or thin splints more easy and effective, especially where tightness or pressure is required, and to retain dressings. Tow, in cases where the discharge is great, is a good assistant, or substitute.

Bandage. This is the last, though not the least important part of each dressing. Writers, upon this subject, are more than ordinarily full in their explanations ; and the numerous divisions on that head are extremely perplexing : even when an illustration has the aid of the best engraving, the mode of application is often of too complicated a nature to be understood by the man of experience, more especially by those who have not had the opportunity of observing or performing it. It is only meant then slightly to notice the names, distinctions, and mode of applying

applying some of the most common bandages ; and to recommend the attainment of such part of the rest as is necessary, from observation and practice : which, after all, must be guided by the Surgeon's own dexterity and discretion.

Bandages should be made of linen cloth that has been in use, yet strong and clean ; they ought to be free from seam, knot, roughness, or loose threads, and should be cut, in length, breadth, and shape, according to the part or occasion, to which they are to be applied. They are commonly divided into simple, or compound. The simple are either rolled up at one, or at both ends, which are called single, or double headed rollers ; and may be applied in a circular, spiral, or re-inversed manner ; that is, half twisted, to make them fit even. Compound bandages have slits or apertures in them, or are made up with several pieces stitched together. The bandage with four heads, tails, or loose ends, with a hole in its middle for the insertion of the chin in the fractured jaw, and the eighteen-tailed bandage used for fractured limbs, are of this sort. Some again have their names, from the part of the body to which they are applied ; for instance, the bandage of the head, thorax, &c. and from their resemblance to some figure, the
spica,

spica, scapha, stellated, T bandage, &c. others have their appellation from particular uses, viz. retentive, uniting, dividing, &c.

The neatest and most secure way of forming the simple single-headed bandage to the arm, is, by first making a turn or two round the wrist, and then proceeding to the part, where the bandage is required, spirally, that is, where the edge of each succeeding round ascends or descends upon the former at a short distance, somewhat like the winding of a screw; if it be made on the lower part of the leg, to begin round the foot and ankle, then proceed as before; and as the tapering of the leg, especially near the calf, will make the windings fall uneven and bag out, it will there be necessary, at every turn, or every second round at least, to reverse the bandage, or give it a half-fold backward, which maxim must be observed on all occasions, where the shape of the part may require it. In the double-headed roller the middle is to be first applied, and each part according to the case to which it may be adapted.

Care should be taken not to apply bandages either too tight or too loose; the one will occasion pain, tumour, inflammation, and perhaps gangrene, and the other will render them of no effect.

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PRACTICAL SURGERY.

PART THE FIRST.

INFLAMMATION AND TUMOUR.

SYMPTOMS. EVERY organized part is subject to inflammation; which disease generally begins with a sense of cold and shivering, thirst, and watching; the part affected becomes red, tense, and painful; during the rigor, the pulse is small, quick, and unequal; afterwards, full and throbbing. The secretions are diminished, the skin grows dry and stiff, the urine is high-coloured and turbid; and the blood that is drawn, when cold, is covered with a tough buff-coloured size.

Phlegmon. The tumour known by this appellation, is inflamed and circumscribed; and is accompanied with heat, redness, tension, and throbbing pain: when slight, it has but little effect upon the general system, but if considerable, is attended with the foregoing febrile symptoms.

CAUSES, *Externally*, are whatever tend to stimulate or produce pain or irritation; such as wounds of every kind, burns, scalds, bruises, stimulating applications, ligatures, violent exercise, heat and cold.

Internally, a critical termination of febrile matter, or a vitiated state of the fluids. The proximate

mate cause of Inflammation is not satisfactorily explained.

Termination. Inflammatory complaints terminate either by dispersion, maturation, gangrene, or scirrhus.

Dispersion, or Resolution, is the most eligible mode of termination, except in tumours that are critical, or the consequences of a vitiated habit.

To effect the cure by dispersion, all exciting causes must be removed; and hot fomentations and emollient cataplasms are improper applications for that purpose: instead thereof, saturnine solutions and cold discutients should be used: namely, Goulard Water (Aq. Lytharg. acetat. comp.) a solution of sugar of lead in vinegar and water, or of crude sal ammoniac in vinegar; keeping the part constantly moist with poultices composed of one or other of these mixtures, and the crumb of bread. But if the part be too tender to bear the weight of a poultice upon it, soft linen cloths, once doubled and moistened with these liquids cold, may be frequently applied.

In case of extreme heat, tension, or irritability, a small portion of bland olive oil, or oil of roses, by themselves, or mixed with about a fourth part of vinegar, may be gently rubbed over the part. If it be extremely tender, a piece of fine rag dipped in milk just warmed, or spread lightly with the white liniment, may be occasionally applied. In some deep-seated inflammations; vinegar, with or without sal ammoniac, and mixed up with crumb of white bread, has proved an effective discutient.

Blood-letting should be repeated according to the exigency of the case, and the strength of the patient; cupping and scarifying, and the application of leeches near the part affected, are sometimes of service, and are more suited to debilitated habits than the customary mode of drawing blood.

Gentle

Gentle laxatives, and a low diet, have much better effect in most constitutions than brisk purges; such as Glauber's salts in a large portion of water, or a solution of soluble tartar now named kali tartarifatum and manna in barley water, almond milk, or infusion of fenna. A great deal depends upon plentiful dilution; drinking a small quantity at a time, and often, of toast and water, barley water with orange juice, thin gruel, or the like. Ripe fruits, or their juices, are also beneficial, by abating thirst, and correcting heated bile. Nitrous and neutral mixtures are likewise of use; and in case of extreme pain or irritability, which are the general attendants of considerable inflammations, opium will be absolutely necessary, and should be given in doses sufficient to abate those symptoms. The tincture of opium, joined with antimonial or ipecacuanha wine, and occasionally repeated, forms a medicine far preferable to opium or its tincture separately.

Maturation, or Abscess. When the tumour grows larger and softer, the throbbing pain increases, and a rigor attends, the means for dispersion should be laid aside; and it will be proper to pursue the following treatment, in order to assist nature in the business of suppuration.

If the patient be much weakened, a more full diet should be allowed, and such applications should be made as may tend to create and preserve a just degree of heat in the tumefied part. Warm emollient fomentations, and cataplasms with bread and milk, to which a little pure oil or fresh butter may be added, should be applied; the former every sixth hour at least, the latter every fourth hour. Roasted onions, or a small portion of the warm gums dissolved with the yolk of an egg, and added to the poultice, are proper stimulants when the inflammation is deficient; on which occasion also, cupping without scarifying is said to be of use. In

B 2

cold

cold indolent tumours, no remedy answers better than the plaster of Lytharge with the gums.

When the throbbing pain abates, a thinness and rising appears in some part of the swelling, a fluctuation is perceived, and the fever gives way, the abscess ought to be opened; otherwise, absorption may take place, and greater mischief will ensue. It is not necessary to wait for full maturation in abscesses, on or near the joints or bones, or seated over the thorax and abdomen, or in those which are critical.

The methods of discharging the matured fluid are, by simple incision, caustic, or incision with seton.

Simple incision is performed with the lancet, and scalpel, or bistoury with a director. It is a useful mode of opening in fistulæ, small abscesses, and to prevent the deformity of a scar; always remembering to make the incision, if possible, in the most depending part, and according to the course of the fibres.

Caustic is seldom necessary. This mode is principally of use where the malignity of the complaint is likely to prevent quick incarnation, and lips after incision are apt to grow callous, of which kind are venereal buboes; to expose a carious bone, and to make large fontanels.

The caustic is to be applied after the following manner: cut a proper-sized hole in a piece of sticking plaster, fix it close to the part, and lay a few slips of the same one upon the other, round the edges of the opening; then apply a small pledgit of lint spread with a mass of equal parts of the stronger common caustic and soft soap, into the opening of the plaster down to the skin, and a large piece of the plaster over all. Care should be taken to make the opening of the plaster less than the intended opening of the teguments, as it is
hardly

hardly possible to confine the caustic within proper bounds.

To lay a bone bare, or make an issue, it must be continued upon the part several hours; to open an abscess three hours may be sufficient; but in every instance the effect and time will be in proportion to the thickness of the skin, and the nature of the part. When the eschar is perfectly formed, it will be proper to scarify down to the sore, and remove as much of it as can be done without pain.

The incision with seton is of all others the most eligible method of discharging the contents of a large abscess. It empties the swelling gradually; by which means, the sides contract and adhere much sooner than by any other mode of opening: besides, it prevents a free admission of the common air to the internal surface of the sore; and is attended with less pain and inflammation: it is commonly done after the following manner:

Make a proper opening with a stout lancet in the superior part of the abscess, into which introduce a curved director, or eye-probe, armed with cotton wick or soft silk, proportioned to the size of the tumour, and gently thrust the point of the director down to the most depending part of the swelling, till it is felt externally; then make an incision upon it with a knife, or stout lancet, and let the inferior orifice be rather the largest; through which draw the director or probe, with so much of the cord as will leave two or three inches of it hanging out of the lower orifice. The cord or seton must be moved downwards every day, and all such part of it as was used the day before must be cut off. In proportion as the discharge lessens, let the size of the seton be diminished, by withdrawing a thread or two every other day; and when it is wholly withdrawn, confirm the union by a compress, and a gentle bandage. This practice is universally approved, and its advantages are more particularly described by

Mr. Bell in his ingenious and useful performance on the treatment of ulcers.

The general mode of dressing an abscess opened by simple incision is, first, with lint lightly pressed between the edges of the opening; afterwards, with mild digestives; the white or yellow cerate made with the purest materials, and spread thin upon lint, are the mildest and perhaps the best applications. Should the edges grow callous, it will be necessary to scarify them, and to touch them with lunar caustic. Tents and vulnerary injections are happily discarded. Fungous flesh is to be prevented by keeping the edges down with lunar caustic, and dressing with dry lint, now and then with lint or rag spread very thinly with the white cerate, and using a moderate bandage. When inflammation is removed, and the discharge is in moderate quantity, a slight compress and bandage will hasten the cure.

In abscesses to which the caustic has been applied, it is generally adviseable, as soon as the eschar is perfectly formed, to make a fit opening therein for the discharge of the matter, with a lancet; and to scarify or clear away a principal part thereof with the knife and hook, waiting for nature's effort to separate the rest. It will be right in common to apply the emollient poultice repeatedly in contact with the sore, for a few days after the opening has been made, especially if any induration remain in the circumjacent parts; then to dress superficially, as directed in the foregoing paragraph.

In the cure by incision and seton, little more is required to be done, than smearing over that part of the cord which is next to be drawn down into the sore, with a soft liniment. In this, as well as every other method, the part should be cleansed, and the dressings should be repeated, according to the quantity and quality of the discharge.

Gangrene

Gangrene or *Mortification*. This is the worst consequence of an inflammation. An incipient mortification is called a *Gangrene*; when the disease is complete, and extends to the bone, it is termed *Sphacelus*.

DESCRIPTION. In the *Gangrene*, the bright redness changes to a dusky livid colour, the pain and sensation are diminished, the tension abates, vesications filled with various-coloured ichor appear, and the pulse sinks.

In the *Sphacelus*, which is the last stage of a mortification, the part is quite black, has no pain or sensation, and emits a disagreeable stench; the pulse quickens and sinks, and without support, oppressive languors succeed, profuse sweats come on, the patient grows cold, and life soon passes away.

CAUSES. A *Gangrene* may proceed from a high state of inflammation; from obstructed circulation, by ligature, pressure, or extreme cold; from a vitiated habit, or state of the bilious and other secretions; from old age, or constitutional weakness.

Internal Remedies. Should the general symptoms of inflammation run so high as to indicate gangrene, which is not unlikely to be the case in a young subject, where no previous evacuation has been made, a slight bleeding and gentle evacuations will be proper; but in the more general and confirmed kind of gangrene, attended with languor, and an acrid state of juices, the system should be regularly kept up, by nutritive diet, wine and other cordials, and tonic medicines. To which end, from half a dram to a dram of peruvian bark, taken every hour or two, in a small glass of wine, or brandy and water, will greatly contribute. In case of stricture, heat, and dryness of skin, which sometimes greatly incommode the patient on first taking the bark, a spoonful or two of the following julep will relieve, by exciting a gentle perspiration,

Camphor Mixture, six ounces; Mindererus's Spirit (Acetated Water of Ammonia) two ounces. Mix.

Sometimes it will be useful to add to this mixture a dram or two of the Aromatic Confection. In many cases where the stomach has rejected the bark given in the manner now directed, the following formula, prescribed by Mr. Bell, has answered well :

Simple Alexeterial water, and strong cinnamon water, each three ounces; aromatic water two ounces, bark finely powdered half an ounce: the dose, two spoonfuls every half hour or hour.

Sweats are weakening, and should be studiously corrected; towards which, nothing is so likely to contribute as the addition of a few drops of elixir of vitriol, so long as that symptom requires, and as often as the stomach can bear it; but the best mode of giving the drops, is in the patient's common drink. A decoction of virginian snakeroot has proved singularly beneficial to persons greatly advanced in years, and of a cold constitution, where the stomach totally rejected the bark.

When the mortification is fixed on the lower extremities, and is attended with a burning obtuse pain, opium, taken with a strong decoction of bark, may prove efficacious; in which case it is best to begin with a grain every three or four hours, and gradually increase the dose if necessary.

In mortifications, more especially those which arise from internal causes, the principal dependance is upon internal remedies. Generous wine, and the bark, are allowed to have preference. A proper stool must be occasionally procured, agreeably to the strength and natural habit of the patient. Domestic glysters, or rhubarb in small quantity alone, or joined
with

with soluble tartar (tartarized kali) are most likely to have proper effect.

External Remedies. The most general applications are the cummin seed poultice and poultices made with the flour of oatmeal, or grated crumbs of bread, and a sufficient quantity of the grounds of strong beer. The fermenting poultice, recommended in mortification of the toes, is of general use in cachectic habits. The gangrenous tendency from excessive inflammation, is most likely to yield to the common white bread poultice frequently applied, with the addition of a little bland oil.

It is a matter of doubt with some eminent practitioners; whether spirituous fomentations and strong digestives are of much use; the relaxing heat with which the former is often applied, and the strong stimulus of the latter in incipient mortifications, may do as much harm as good; the chief use of either is most probably derived from their antiseptic qualities, which the poultices may be made equally to possess. The good effect of scarifying to the quick is also disputed; such incisions, so far as they serve towards removing the dead parts without pain, are undoubtedly useful; further is not to be proved, until we are better acquainted with the degree of stimulus necessary to assist the vis naturæ. The following epithem is said to have been much used in the northern part of Great Britain, yet it will prove too potent a stimulus with most irritable habits:

Crude sal ammoniac, one dram; best wine vinegar, two ounces; pure water, six ounces,
Mix.

When a line of inflammation appears between the diseased and the sound parts, there is reason to expect a perfect separation, and the slightest and most easy dressings answer best,

Mortified

Mortified parts in the extremities, where the bones are thoroughly diseased, will require amputation; but in aged and debilitated habits, that operation ought not to be performed, till a regular separation through the muscular parts has taken place.

Scirrhus in consequence of inflammation is treated of under the articles *Scirrhus* and *Disorders* of the *Breast*.

ERYSIPELAS, OR ST. ANTHONY'S FIRE.

DESCRIPTION. Is a species of phlegmon with no evident tumour; it is principally seated on the exterior part of the cutis, spreads irregularly, and sometimes to great extent. It is attended with a diffused redness, which disappears on pressure, but returns, also with a burning heat, more or less fever, sickness, and vomiting; and is of a bright or dull red colour, according to the vigour of the constitution, or the degree of acrimony in the fluids. It seldom inclines to suppuration, unless improperly treated, or when it extends to the cellular membrane; but generally throws forth small pustules, or vesicles; containing an acrid watery humour. It is commonly attended, for two or three days before and after such appearances, with the symptoms of an inflammatory fever, and gradually declines, leaving the skin of a yellowish colour after the cuticle has scaled off.

The urine is, at first, for the most part, high-coloured and turbid; afterwards it lets fall a copious, lateritious sediment.

When it seizes the face, head, or neck, the skin grows tense, and is inflated to a high degree; in that case, head-ache, coma, and sometimes delirium ensue; if it attack the limbs, the febrile symptoms are less violent. The alimentary canal sometimes suffers under erysipelatous inflammation. If the patient's

tient's constitution has been broken down by age, disease, or any other cause, it often terminates in a gangrene; especially if it be combined with a pestilential or malignant fever.

CAUSES. The general causes of this disorder, are constitutional diathesis, plethora, great heat, irregular living, sudden cold after heat and sweat, drinking too much of fermented or spirituous liquors, bilious or scorbutic acrimony.

CURE. When the erysipelas is of the true inflammatory kind, the antiphlogistic regimen and remedies are proper; venæsection and evacuations are to be regulated by the quantity of fever, and the strength of the pulse; and are generally necessary during the first symptoms; yet care should be taken not to reduce the patient too low.

In the common mild kind, lenient purges, and diluting plentifully with small milk and water, barley water, cream of tartar or cheese whey, will prove sufficient. The most proper lenitives are, half an ounce of Glauber's salt, dissolved in half a pint or more of water, of which a cupful is to be repeatedly taken till it answers; soluble tartar (tartarized kali) and manna dissolved in the common emulsion now called almond milk, or a slight decoction of senna with prunes. Glysters may be occasionally administered, and, in the interim, nitre with camphor, or neutral mixtures with the fixed or volatile alkali. In scorbutic habits, no one preparation succeeds better than the infusion of malt. If the complaint has affected the head and chest, and been imprudently repelled, bleeding, blisters on the back or legs, Mindererus's spirit with the compound powder of contrayerva, and gentle evacuation by stool, will be necessary. When the disorder is critical, great evacuations are utterly improper; and acid, astringent, or cold applications, must be avoided. If the complaint be attended with a putrescent state of the juices, or a languid state of the vis vitæ, cordials and anti-

antiseptics, such as the bark mixture heretofore mentioned, the julep with camphor, and Minde-
 rerus's spirit, cordial confection, and the like. Red
 wine is also useful, by itself, in negus, or other-
 wise. Some modern writers indiscriminately order
 bleeding, purging, and unctuous applications; but
 such practice has proved very improper in par-
 ticular habits; the same indifference is also ob-
 served with respect to the use of repellents in the
 piles; from which much mischief has sometimes en-
 sued.

External Treatment. Sponge the part with an in-
 fusion of chamomile flowers and milk, or use cloths
 wrung out of a decoction of elder flowers, with the
 addition of a little opodeldoc. In constitutions that
 will bear repellents, cloths moistened with Goulard's
 vegeto-mineral water may be applied; and, in ob-
 stinate cases, a slight solution of alum has proved
 serviceable. When blisters or pustules appear, and
 begin to discharge their acrid contents, the best
 and safest method is, to sprinkle lightly over the
 part, *scœnugreek*, or some other kind of farinaceous
 powder, and to apply a piece of fine doubled rag
 spread thin with white cerate. Cabbage and vine-
 leaves have sometimes good effect. House-leek
 and cream is also a common and effective applica-
 tion; but the three latter remedies should be cau-
 tiously applied. Emollient fomentations ought also
 to be used with caution, as they tend to promote sup-
 puration.

ANTHRAX OR CARBUNCLE.

DESCRIPTION. The anthrax in the plague, ap-
 pears suddenly in the form of a blister, which is
 followed by a large, blunt-like, black spot, and is at-
 tended with very little tumour. Sometimes it comes
 on with much itching, and is surrounded with a red,
 fiery

fiery circle, forming small tubercles of corrupt flesh, and mortifies in a short time.

There is a tumour of a milder nature, which, from its frequent dusky appearance, and tendency to gangrene, comes under the same denomination. It is somewhat hard and round, and in aged persons, or vitiated habits, inflames to a considerable extent. The part forms into a loose, corrupt substance, with ill-conditioned matter, and is frequently a fatal preface to those who are far advanced in life.

CAUSE. Carbuncles generally spring from a putrid or putrescent state of the juices.

CURE. As this species of inflammation is much disposed to gangrene, the most proper treatment is that which is directed under that article. In the strong plethoric habit, early in the disease, a moderate bleeding, and a gentle dose or two of cooling physic, may tend to regulate the habit, and prevent its progress. In languid constitutions, the bark, serpentary, and vitriolic acid, are of the greatest use.

It has been a practice, to cut out, at different times, as much of the sloughs and diseased parts as could be removed with ease and safety: but such treatment ought to be chiefly confined to the central part of the tumour. The surgeon who is conversant in such cases, knows well the necessity and utility of preserving the teguments around as much as possible, notwithstanding their flaccidity and rather gangrenous tendency; for when the subjacent parts are too freely exposed to the air, they are apt to form eschars, instead of forward suppuration; besides, although the appearances are threatening to a great extent, yet, with the use of the cortex, proper regimen, and the suppurative or mixed cataplasm, the sore is sometimes to be brought within tolerable bounds; after which, should the teguments remain loose around the sore, a soft compress and gentle bandage will mostly assist their union.

Strong

Strong stimulating applications are here also to be avoided: the poultices with white bread and milk, and strong beer lees with oatmeal, by themselves, or mixed with due proportion, according to the aspect and irritability of the sore, are most proper; together with the mildest dressings next the sore.

FURUNCULUS, OR BOIL.

DESCRIPTION. It is a small, circumscribed tumour, situated in the skin and cellular membrane; it rises to a point, and is attended with inflammation and pain. It shews itself in all parts of the body, and at all ages; commonly maturates in a few days, and sometimes casts out a slough, and heals without much trouble.

Boils are said to be wholesome; in a moderate degree, they may be a relief to the habit, otherwise they become oppressive, and the efforts of nature alone are too weak to overcome the ill.

CAUSE. It proceeds from an acrid lymph, or vitiated bile, produced from error and irregularity of diet. Tumours of this kind are extremely apt to form when the digestive faculties have been impaired by illness, and the appetite has been too much indulged.

CURE. The emollient cataplasm, or a plaster of diachylon with the gum, are the most proper applications to render suppuration complete; afterwards white cerate spread lightly upon lint; or the precipitate medicine, if foul and sloughy. A gentle dose or two of purging physic will be proper; and, should the habit be greatly affected, the bark and vitriolic acid will be necessary.

There is a species of furuncle which seamen and fishermen are more particularly subject to; they call it a water-boil. This tumour rises hard; the inflammation is of a deeper red than common, and spreads wide around; during the suppuration, the surface
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grows

grows spongy, and a brownish, bloody matter, which forms underneath, may be pressed out at various openings. In that state it is often necessary to remove the whole surface, which will be best effected by a dressing or two with red precipitate powder, alone, or mixed with white cerate; afterwards, dress as in common, guarding well against fungus, with lunar caustic or blue vitriol.

PARONYCHIA, OR WHITLOW.

DESCRIPTION. It is an inflamed and very painful tumour, and may be distinguished into two kinds. The one generally penetrates no farther than the common integuments round the nail; the other begins deep, and fixes upon the periosteum and root of the nail. Sometimes the disease extends to the ligamentous covering of the first joint of the finger and the capsule of the tendon; in which case the whole hand and arm become greatly swelled and painful. Both kinds are attended with fever, restlessness, and throbbing pain; in the deep-seated whitlow, the inflammatory symptoms have run so high, as to occasion delirium, and even convulsions, and the bone has very soon proved carious.

CAUSES. This complaint is produced by bruise, wound, or puncture, or by an acrid lymph stimulating the nervous or membranous parts; and is more or less dangerous and severe, in proportion to its depth, and the sensibility of the parts affected.

CURE. Poultices and drawing plasters, as they are called, are generally applied as soon as possible; but, in the early stage of the disease, bleeding, and the cool regimen, with a dose or two of cooling physic, constant application of compresses moistened with the saturnine solution, or the sharpest vinegar with a due proportion of sal ammoniac, have often stopped its progress.

If,

If, notwithstanding the use of those remedies, the pain should increase, it will be proper to apply the emollient poultice, spread thick and warm, every three or four hours; soaking the part well beforehand, in a warm decoction of mallow leaves, or chamomile flowers, with milk. In both kinds it will be improper to wait for perfect maturation, before an incision is made down to the part where the matter appears to be forming.

In the deep-seated whitlow, which is attended with exquisite pain, an incision should be made in due time, through the ligamentous expansion, or down to the bone on one or both sides of the finger, so as to release the most strictured part, previous to suppuration. Dress with lint, dry, or spread with cerate gently pressed, at first, between the lips of the incised wound; and continue the poultice. Opiates will be occasionally necessary.

In the mild sort of Paronychia, a troublesome and tender fungus frequently sprouts up along the side of the nail; which is mostly remedied by pressing a small piece of dry lint under the edge of the nail, between that and the fungus: sometimes it is necessary to use escharotics; but these have little effect, unless lint be first pressed underneath the edge or corner of the nail, which part should be cut away as close as possible, without touching the quick.

BUBO AND PAROTIS.

DESCRIPTION. An inflammatory tumour seated in the glands of the groin or armpit is called a Bubo; if behind the ear, or on or near the parotid gland, Parotis. It is generally of an oval or roundish shape, is red, painful, and throbbing, tending either to maturation or scirrhusity.

The venereal bubo is generally oblong in shape, has an unequal surface, and a broad extended base; either resists pressure, as in scirrhus, or retains im-

pression, as in the œdematous and suppurative bubo; which symptoms are sufficient to distinguish it from Hernia.

CAUSES. The simple or milder sort is critical, and often happens after a fever, when the morbid fomes has not been totally discharged from the habit. The malignant bubo is the accompaniment of venereal or pestilential disorders, and the consequent of a diseased habit.

CURE. In tumours of this kind, when not produced by any internal disease, the cure may be first attempted by dispersion; which treatment is mentioned under the article Inflammation: to forward which purpose, a dose or two of Calomel with Camphor, succeeded by a gentle cathartic, has been found of great use. If the pain and swelling should increase, apply suppurative means, and open by incision.

In pestilential buboes, maturation must be hastened by the most probable means, and the matter should be discharged by incision as soon as possible. Vide Gangrene.

With regard to those of the venereal kind, when they are not too far advanced, that is, not beginning to suppurate, dispersion is the most eligible mode of cure; which is to be brought about by bleeding, gentle cathartics, Goulard's water, or sal ammoniac dissolved in vinegar, or friction with mercurial ointment. If dispersion should be effected in a later stage of the disorder, it will be proper to persevere in an alterative course for a few weeks. Should dispersion not succeed, apply suppurative plasters or poultices, and order a more generous diet, open by caustic, and compleat the cure by an alterative course. In the cure of a venereal bubo then, it is necessary to treat it according to the state of infection from which it proceeds; if local, it may be either dispersed or brought to suppuration; but if of the latter stage, every means should be used to produce maturation;

those of long and slow progress are apt to form phagedenic ulceration with callous edges, and a part commonly remains in an indurated state.

Sometimes the sore remains obstinately bad, although the virus has been perfectly eradicated; the edges grow hard and livid, the discharge is sharp and foetid, and the ulceration spreads considerably, so as to reach the inferior part of the abdomen, and upper part of the thigh. The pain then is intolerable; and fever, restlessness, and a train of terrible symptoms, soon reduce the patient to a mere shadow.

The most approved method of proceeding in this dreadful state of ulceration, is, to give daily a quart of the mezereon decoction, opium repeatedly, in sufficient doses to allay the pain and extreme irritability of the system, and to administer the bark in quantity. Externally, to apply lunar caustic to the irregular edges and indurated parts, or red præcipitate in powder or mixed up with a soft ointment, to the whole surface of the sore. An ointment compounded of one part prepared calomel, and four or five parts of white cerate, has sometimes proved efficacious in this state of ulceration.

PERNIO, OR CHILBLAIN.

DESCRIPTION. The kibe, or chilblain, is an inflammatory tumour, arising from the part affected being exposed to severe cold, or, when very cold, being too suddenly heated. It is attended with redness, heat, shooting pain, and itching. It most commonly affects the hands and feet, particularly the heel; the ears, nose, and lips, are also subject to it, and in some habits, the arms and legs are much swelled and cracked with it. This disorder chiefly affects children of a delicate complexion, or those of a scrophulous habit.

The

The parts affected frequently wear a leaden colour, become inflated, and vesicate after the manner of scalds and burns; which vesications sometimes form into deep ulcers, that discharge an ill-conditioned matter, and by neglect or mismanagement have degenerated into gangrene.

CAUSES. Cold, and a languid circulation. This complaint is in greater or less degree according to the state of the constitution, or the intenseness of the cause. It often takes its rise with children, from the part being wet and cold, and too hastily dried by the fire; also, from sitting upon a hard seat too long together.

CURE. Bathing with camphorated spirit, or applying cloths dipped in saturnine lotions, have often dispersed this complaint, even after vesications had made their appearance. The best applications when ulcerated, are, the yellow cerate, saturnine ointment, and cream inspissated with Goulard's extract.

When a part is benumbed with cold, the fire or immediate warmth are to be avoided: instead thereof, plunge it into cold water, or apply cloths dipped therein, or chafe it with snow, until a proper glow is returned; after which, use friction, cordials, and diluents. In such a case, a sudden transition to heat, a warmed bed, or a warm room, would be attended with great danger to the part affected.

BURNS AND SCALDS.

DESCRIPTION. These are subject to the same events as inflammation, and may be divided into four different degrees or stages: when the part is affected with heat and inflammation without vesication; when it is immediately afflicted with intense pain and vesication; when the integuments are so injured, as to produce a deep eschar; and when the whole is in a gangrenous or lifeless state.

CAUSES, are fire, or a heated body, either in a solid or fluid state.

CURE. Burns and scalds differ in their degrees of inflammation, and are to be treated accordingly. The first and second degrees require resolvent applications; the third, emollients and suppuratives; the fourth and last degree should be treated after the same manner as directed for gangrene and sphacelus.

Bleeding and cooling purges, with nitre and plentiful dilution, are the first things to be attended to in burns and scalds of great importance: it is also necessary to observe a regular and cooling diet. Such means, properly pursued, in the first stage, have an exceeding good effect in the prosecution of the cure. Opiates also ought to be administered according to the degree of pain.

Spirit of wine and camphor applied quickly to a burn or scald, is said to prevent vesication; a likely application for that purpose is Goulard's vegetable mineral water; immersion in cold water, or other cold fluids, is also recommended; and cloths dipped in, or poultices mixed up with, Goulard's water and his saturnine cerate, are preferred by some.

Some practitioners are for, others against, discharging the acrid lymph from the blisters. In the smaller kind it is not unlikely to be absorbed; but in the larger, it will be better to let it out, by making a slight puncture at its edge, in the most depending part; by which means the vesicle, when emptied and lightly pressed down, will act as a defensive against the external air.

When the part is so much burnt as to form a deep eschar, emollients are the most proper applications: of which class the first in order is the common bread poultice mixed with a small quantity of bland oil.

Great care must be taken to keep down fungus, and prevent contractions and agglutinations which are too often the consequences of these complaints, by

means of lint medicated with vitriol water, or by keeping the edges down with blue vitriol or lunar caustic; and when the fingers or some other parts are affected, pasteboard with proper bandage will be necessary to keep them extended and separate from each other.

In burns and scalds of considerable extent, the discharge is often so great as to require a liberal use of the bark and elixir, or small spirit of vitriol. Milk mixed with lime-water is an excellent absorbent on such occasions.

When the inflammation is so great as to threaten gangrene or mortification, proceed according to the directions given under those articles, when arising from excess of inflammation.

The following treatment was communicated by Mr. David Cleghorn, a considerable brewer in Edinburgh, to the late Mr. J. Hunter, as having been remarkably successful, and is published in Dr. Simmons's Facts and Observations, Vol. II. In recent cases, he applied cloths profusely wetted with vinegar, or a constant flow of that liquor, over the injured parts. When ulceration had taken place, he applied a common poultice with white bread and milk for six or eight hours, then covered the sores with chalk finely scraped off a lump of that substance, in sufficient quantity to absorb the moisture, and a poultice, of the same kind as before, over the whole; but if the skin and parts around were soft and much swollen, he used the saturnine ointment, or Goulard's cerate, instead of the poultice. The large vesications he emptied by puncture, with a pin or the point of a lancet, at the most depending part; and pressed down the raised cuticle with a piece of fine linen cloth. After having thus discharged the water, he applied the vinegar as before, and repeated the dressing night and morning. Where the parts were raw, and the vinegar proved too sharp, he covered the sore with the cerate; then wetted it round with

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vinegar,

vinegar, for a quarter of an hour or longer; and, on removing the ointment, applied the chalk and poultice as before mentioned. He also let out the contents of every pustule, and took off the cuticle as it dried, taking care to cover every moist part with the chalk. Some habits are certainly too irritable to bear the application of vinegar repeatedly; cold water will probably have equal good effect. An instance is known of a man falling into a copper of hot wort, who was stripped, and, almost immediately after the accident, plunged into a tub of cold water that happened to stand near; he recovered with scarcely the appearance of a blister: besides, vinegar in such a case is not to be procured so easily, or so readily as water; yet the former may be better adapted to a dull fibre, or sluggish habit.

HERPES, OR CREEPING ULCER ON THE SKIN.

DESCRIPTION. This is a cutaneous disease, attended with inflammation, and may be divided into four classes.

The first is called *Farinosus*, and is commonly called a *Tetter*. It breaks out about the face, neck, arms and wrist, in small red pimples, and in the form of a broad spot; it itches much, and the pimples change in a short time to a branny powder, leaving the skin quite smooth.

The second is named *Miliaris*; it generally breaks out in clusters or rings of pustules. They contain a clear, corroding lymph, which is gradually discharged, and afterwards form into small scales; they smart and itch much, and are attended with inflammation; sometimes erode the skin, and spread considerably; but the latter circumstance seldom happens, unless in a vitiated habit. This kind is called a *Ringworm*.

The third sort is the *Pustulosus*; it appears in pustules containing a thin, serous matter, which
turns

turns yellow; they commonly run together, exude and dry into a scab, which falls off, and leaves the skin entire. Sometimes the matter is so acrid as to excoriate the parts around the scab, and spread the complaint. Children are very subject to this kind of eruption, particularly in the face, head, neck, and behind the ears.

There is an obstinate eruption of this kind, which shews itself on the sides and palms of the hands, and soles of the feet, also between the fingers and toes; it has much the appearance of an inveterate itch, and has sometimes been removed by similar means.

The fourth class is called *Exedens*; it appears in spots of several ulcerations, discharging a sharp ichorous matter, and is attended with an erysipelatous inflammation: this sometimes corrodes the cellular membrane, and even the muscles. It spreads generally about the neck, chest, and waist, in form of a zone or girdle, and when it fixes about the loins, is called the shingles: pain and fever commonly attend this eruption at its first appearance.

CAUSES. This complaint frequently yields to external applications only; it is therefore considered by many to be local, from a partial obstruction and acrid state of the perspirable matter: yet some obstinate cases have been held forth, as proofs of a pre-existent acrimony in the constitution.

CURE. The *farinosus* generally yields to warm-bathing and friction; the second and third kinds, viz. *miliaris* and *pustulosus*, submit most commonly to saturnine preparations, the camphorated vitriolic water, white præcipitate ointment, warm bathing, and gentle perspiratives, such as wine of antimony with paregoric elixir, and decoction of sarsaparilla with saffrafras: when the parts inflame much, nitre or cream of tartar, with gum arabic, will be proper. The following liniment has proved effective in an obstinate case of the *pustulosus* kind:

C 4

White

White præcipitate ointment, one part ; sulphur, three parts ; simple ointment, twelve parts. Mix, and lightly smear the parts with it, night and morning.

A weak aqueous solution of corrosive sublimate, in the proportion of from five to ten grains to a pint of water, is recommended by some as an effectual wash in most of these complaints ; but it should not be applied in the inflammatory state. In all such disorders, the most simple and useful remedy is fœnugreek seed finely sifted, covered or not with white cerate spread upon rag.

If the fourth species of this disease should resist the before-mentioned remedies, it is most probably contaminated with a morbid state of the lymph. Mercurials, bark, and antimony, will then be proper, according to the nature of the habit.

Scarborough water is of use in these disorders. Sea-water is also prescribed, and sea-bathing ; but are most beneficial when free from inflammation or fever.

Provided the last species of eruption be attended with fever, pain or inflammation, sickness and languor, which symptoms often occur in erysipelatous habits, cold repellents should be cautiously applied ; in such case, fœnugreek seed, finely powdered, is the most suitable external remedy.

ULCERS IN GENERAL.

DESCRIPTION. An ulcer is a sore in the soft parts, attended with a loss of substance ; from which issues a purulent, sanious, or vitiated matter. It may be divided into three classes ; viz. the simple, the compound, and the complicated.

The *Simple Ulcer* is that which discharges a whitish pus of a moderate consistence ; and is commonly in that state of purity to which all others must be reduced,

reduced, before they can be properly cicatrized. It is a local affection, unconnected with constitutional disease, and is seldom attended with any remarkable incident during the progress of its cure.

The *Compound Ulcer* is also local; it is attended with a variety of circumstances, and receives various appellations from the different conditions of the surrounding and subjacent parts; also from the nature and quality of the discharge; but the principal distinctions necessary to be observed in this class, will appear under the following descriptions.

The *Fungous Ulcer*; which throws out a spongy, high-growing flesh, in appearance like a prominent cancer: this exuberance rises flabby and soft, but by length of time acquires a considerable degree of hardness.

The *Sinuous, or Fistulous Ulcer*, having one or more openings lying between the common integuments and muscles, that discharge themselves into the common fore: these in the recent state are called sinusses; but when of long standing, and the surface of the hollowness is grown hard or callous, they constitute what are called fistulæ.

The *Callous, or Phagedænic Ulcer*. This is commonly called a *Scorbutic Ulcer*; paupers are particularly subject to this kind of ulcer. The filthy, ichorous discharge of this fore, occasions its edges to turn in, to skin over, and grow thick and hard. Ulcers that arrive at this pitch of callosity, are mostly accompanied with varicose veins; on which account they were formerly called *Varicose Ulcers*; on a supposition that the tumid vessels were the cause; instead of the effect of those hard edges.

The *Carious Ulcer*. It is thus called, when the bone near an ulcerated part is diseased; which may be known from its sponginess and inequality, and by the thin, oily, and fœtid matter. A roughness on the surface of the subjacent bone is also to be perceived, by passing the probe through the loose flesh, which

which generally covers it. In ulcers of long standing, where the bone is thinly covered, the matter is apt to erode the periosteum, and injure the surface of the bone. Sometimes the disease forms in the bone itself, when it is termed a *Spina Ventosa*: this is known by the enlargement of the bony substance, and an irregular thickness in the integuments, and cellular membrane. When an ulcer of this kind first breaks out, it commonly appears with a pap-like fungus. Bones are sometimes enlarged without being carious, or tending thereto; and a thickness of the periosteum has been often mistaken for an enlargement of the bone.

The *Complicated Ulcer*, by which term is meant, that class of ulcers which is connected with some prevalent disease in the constitution, and is liable to the various incidents of those of the second class: of this kind, the principal are, the venereal, scorbutic, scrophulous, and cancerous; which last is considered by some as being local, in its first stage at least. These ulcers, with their characteristic marks, are separately treated of in the sequel.

CAUSES. The causes of ulcers of the first and second class, are, wounds, contusions, &c, producing inflammation, and ending in abscess, or loss of substance. The third class is particularly circumstanced by a predisponent cause in the habit, which has flown to, or produced it.

CURE. The *Simple Ulcer* commonly heals without trouble; the first thing necessary, is, to permit the granulations to rise even with the surface of the skin, which is generally the work of nature alone: during this process, there can be no better dressing applied than a pledgit of lint, dry, or spread very thin with white cerate; for in this, as in most other stages of the sore, the mildest dressing has the best effect. Should the discharge be rather thin or acrid, or, a foul appearance be over the surface of the sore, it will be proper to add a little red precipitate to the cerate;

cerate; but, should that prove ineffectual, the poultice with bread and milk, applied in contact with the sore for a day or two, will best answer the intention of cleansing it, more especially, when the parts around are much inflamed.

When all is clean and even, dress with pure white cerate spread thin on lint or fine soft rag, and apply a piece of soft doubled rag over all, with a slightly compressive bandage. When a fungus sprouts, the edges must be kept down by a light touch with blue vitriol, or lunar caustic.

In ulcers of the leg attended with œdematous swelling, varicose veins, or inclining to fungus, the bandage should be applied in a spiral manner; each edge not exceeding the distance of three quarters of an inch, or rather less; beginning, if in the leg, with a turn or two round the foot and ankle, and gradually rolling upward, to the extent of the swelling or parts affected about the sore; by this means only, the ulceration has often been brought to a healing state, when the sore has not been disposed to fill up. In short, experience says, that many an ill-conditioned ulcer has been cured by the repeated application of the Camphorated Vitriolic Water and bandage, without confinement, or paying attention to antient maxims or method. This truth can be attested by many poor labourers who had lost employment by confinement to their beds, and passed through a mercurial course, and the tedious use of strong digestives, escharotics, greasy balsams, &c. &c. to very little effect.

The *Compound Ulcer* is attended with many circumstances that require peculiar treatment; it will therefore be right to notice each according to the order in which it has been already described.

The *Fungous Ulcer*. Inveterate fungusses very seldom appear on this class of ulcers. In less important cases, mild escharotics, and lunar caustic, with dry lint, or lint moistened with a solution of blue

vitriol and dried, and proper bandage, are likely to have due effect. When the excrescence is considerable, and with a narrow base, extirpation by ligature will be easily effected; if with a broad base, the following means must be used for that purpose; pass a strait needle with an eye at the point, armed with two strong ligatures, through the bottom part, so that the threads may be made to hang out at each side of the fungus; one half of it may then be encompassed by one ligature, and the other half by the other, with a slipping knot; so that each may be occasionally tightened: by which means the tumour will be soon separated. Afterwards dress as before directed.

Extirpation by ligature is generally preferred to excision, on account of the hæmorrhage that mostly follows the latter means. If the fungus should happen in a leucophlegmatic subject, or in an ulcer with caries, it will be to no purpose attempting cure without repairing the constitution, or removing the diseased part of the bone. Fungus is a frequent attendant on relaxed habits, and requires tonics to restrain it.

The *Sinuous* or *Fistulous Ulcer*. Sinusses mostly arise, in abscesses and ulcers, for want of a free outlet of the pus, particularly when it is of a sanious, ichorous nature: supposing the application admissible, an union is sometimes brought about by compress and bandage. When the matter is confined, and the teguments on the opposite side shew an inclination to break out, a counter opening should be made without delay.

The modern practitioners make very little use of vulnerary and escharotic injections; such applications rather harden and extend the sinusses. When they run so deep that the knife or bistoury cannot be safely used for fear of injuring a nerve, tendon, or blood-vessel, a seton should be passed through the principal sinus, if possible, after the manner directed
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under the article *Maturation*. Indeed, where the seton is admissible, it is to be preferred to incision, except in the callous fistula.

The common treatment of a fistula is much more simple now than in former times, when it was the practice of most surgeons to remove the teguments in every case; whereas one incision generally suffices, except when the surrounding parts are greatly diseased, or in a scirrhus state.

The Callous or Phagedænic Ulcer. The acrid discharge, the foul state of the sore, and bad management, are the causes of the troublesome incident which distinguishes this kind of ulcer. In the recent state of it, emollient poultices, duly repeated, have had the desired effect. When the edges have acquired an extraordinary degree of hardness, the knife and caustic are recommended; but both these painful means have been rendered unnecessary in several instances, by applying narrow strips of rag spread thin with white cerate, alone, or mixed with red præcipitate, round the edges, a doubled rag dipped in camphorated vitriolic water, and squeezed moderately dry, laid over the sore, a thin linen compress over all, and the spiral bandage before directed. It is proper to dress thus twice a day, on account of the quality and quantity of the discharge; or, on the contrary, because the dressing grows dry, and hangs to the sore. In irritable habits, it will be necessary to dilute the solution at least with one third water.

If the ulcer be inflamed and very foul, a few applications of the bread poultice will be necessary; and when clean and dry, it will not be amiss to vary the dressing, a few times, with white cerate, saturnine ointment, or the like.

If, notwithstanding, the caustic or knife should be thought necessary, the first is to be preferred. The hardest edges have been removed, by lightly rubbing them with lunar caustic, once in a day or two, and afterwards dressing with lint or a strip of rag spread with

with the cerate, or with saturnine ointment. Provided the ulcer has discharged copiously before, it will be proper, at the first attempt towards cure, to open an issue in the thigh, to order a dram of bark in powder to be taken three times a day, and to repeat, at proper distance, a pill with calomel and camphor, each three grains, and half a grain of opium for three nights successively, and a purge on the morning after the last pill: the pills and purge should be repeated weekly, if the patient can bear it. Varicose veins are to be remedied by the long-continued application of the spiral bandage, or the laced stocking.

The *Carious Ulcer*. The cure of this sore depends upon removing the diseased parts of the bone; to promote which, it will be necessary to make a crucial incision over the part which covers the bone, or to lay the bone bare with the knife or caustic; taking care to prevent the teguments or flesh from spreading over the exposed part, by dressing with lint, lunar caustic, and slight bandage, until the decayed part of the bone be separated; then healing according to the state of the ulcer.

The most likely means to hasten exfoliation are, slight perforations on the diseased part of the bone, with the perforator; or, when the disease reaches deep into the substance of the bone, with the small head of the trepan. The actual cautery was once thought the most probable means; but it evidently tends to injure the rising granulations which generate between the dead and the living parts, and are necessary agents towards exfoliation. If the caries should reach the head of a bone, and great discharge and wasting of flesh should ensue, the chief and perhaps the only remedy would be amputation.

A case is recorded wherein the whole substance of the tibia has been cast out, and formed anew; and we have lately been informed of instances where a part, and even the whole substance of a cylindrical bone

bone which was carious, has been taken away by means of the crown of the trepan, or sawed off, and followed by a perfect cure. Certain proofs these, that amputation is not always necessary in cases of this kind, provided the carious part can be safely removed, and the patient's constitution and strength are not too much impaired: also, when the disease does not extend to the necks and heads of bones, or the cavities of the joints; yet even in the latter case, Nature, with the assistance of internal remedies, has unexpectedly produced a cure.—Vide Spina Ventosa.

GENERAL REMARKS.

The attempt to cure even ulcers of the first and second class, is sometimes vain, unless assisted by regular diet, and internal remedies; especially when the discharge is great, and the constitution is relaxed and weak: in such instances, the bark and a generous diet are of infinite use.

In foul ulcers of the Phagedænic kind, when the discharge is ichorous and fœtid, the bark, sublimate solution, with decoction of the woods, or infusion of saffrafras shavings, are absolutely necessary. If the sore wears a putrescent aspect, all preparations of mercury should be laid aside, and the same remedies should be prescribed, as for the scorbutic ulcer; which see.

Ulcers of long standing are difficult of cure; and in aged persons, the consequence of such cure is said to be dangerous; but with the interposition of an issue or two, proper medicines and diet, many a one has been restored to the perfect use of their limbs, and a better constitution, by being cured: for it is beyond a doubt, that a sore with a large surface and great discharge, can be little conducive to the health of any one; on the contrary, much foulness must be absorbed into the habit, and the strength will be impaired.

People of all ages have been cured of such ulcers by empirics, without the least attention to evil consequences, and have enjoyed many comfortable years in the healed state; which clearly proves, that it is not so dangerous to heal an obstinate ulcer as it is imagined, and that the caution observed in doing it, is not always requisite: still, in most cases of long standing, wherein the discharge has been great, the wary practitioner is much to be commended for endeavouring to insure success upon the safest and surest grounds, by putting his patient under a slight course of alteratives, bark, and a proper regimen.

The following method of cure is recommended from long experience, and has had almost immediate good effect in every kind of compound ulcer, except the carious. If, from the acrid quality of the discharge, the parts be much inflamed and painful, it will be necessary, for a day or two, after spunging them well with a slight infusion of chamomile flowers and milk, to apply the emollient poultice with white bread and milk, or Goulard's vegeto-mineral water, which is less relaxing than milk, and to give an opiate at night, and a gentle laxative in the morning, if necessary.

As soon as the painful symptoms are relieved, an issue is to be cut in one or both thighs, according to the quantity of discharge from the ulcer, a piece of soft rag doubled, the size of the sore and parts affected, and moistened with the camphorated vitriolic water, is to be applied, and over it a thin compress of soft rag; then the part is to be rolled up in a spiral manner, as directed in the compound ulcer, with a roller made of soft linen, or fine Welsh flannel. It will be now and then right to guard the edges with very narrow strips of fine rag, thinly spread with white cerate, otherwise the medicated cloth may adhere to them, and retard the cure: and it will also be necessary, on account of the quantity or bad quality of the discharge, to dress twice at least,

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in the twenty-four hours. Lenient and cooling applications, such as Goulard's vegeto-mineral water, the saturnine solution, the emollient and saturnine poultice, and white cerate, may be occasionally interposed.

In some cases, where the ulcer is obstinately foul, a piece of soft rag, once doubled, or a slice of the crumb of stale white bread, gently moistened with a very slight solution of corrosive sublimate in water, has, in one night's time, rendered it clean, and in a fit state to prosecute this mode of cure. If the sore be of the loose putrescent kind, the mercurial solution will give a blackish tinge to the discharge, and ought by no means to be repeated: instead of it, the remedies recommended for the scorbutic ulcer should be used. The diet must be low or generous according to the immediate symptoms, and constitution of the patient.

How easy and simple a process this, in comparison with what is laid down by former writers upon the subject, who have directed us invariably, to digest, incarn, and cicatrize; to open sinusses, and remove callous edges; and who have recommended rest, as the *sine qua non*, in every case! whereas, by the foregoing method, many have gradually recovered without submitting to either of these injunctions: the general requisites being, an artificial discharge, the simplest dressings, and strict bandage when the state or situation of the ulcer will admit: yet sometimes it has been necessary to lie in bed a few days, when the part has been much inflamed: but this has mostly been requisite, previous to the commencement of the method here described.

VENEREAL ULCER.

DESCRIPTION. This ulcer is of two kinds; the first includes chancres, and tumours in the lymphatic glands, called buboes, which occur soon after the venereal intercourse;

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tercourse;

tercourse ; the second, takes in all those ulcers that are the consequences of a general infection. The chancre of the first description makes its appearance in a small spot, or a red pointed itching pimple, which turns to a vesicle that discharges a viscid pus, or an erosive watery fluid; its edges are inflamed and painful, or surrounded with callosity, and it spreads and produces ulcers in the neighbouring parts.

Ulcers arising from a venereal taint are seldom very painful; they commonly happen in parts that are thinly covered with flesh, and first appear in form of a diffused copper-coloured efflorescence, which rises into pustules, and breaks into a jagged or circular hollow ulcer, with thin reddish edges; at first, discharging a watery, afterwards, a filthy jelly-like greenish matter. Those who are accustomed to the care of patients labouring under this virulent complaint, can judge positively of it at first sight, from the peculiar aspect of the sore, and the nature of the discharge, in spite of the most earnest declaration of the distressed sufferer.

The principal seats of venereal ulcers are in the groin, after the suppuration of a bubo, in the glans penis, frænum, and preputium, the vagina and labia pudendis, which are generally called chancres; these are to be met with in both stages of the infection: also, on the nose, palate, fauces, uvula, and tongue, on the parts covering the bones of the head, legs, and arms, and in the bones themselves, all which are the consequences of second infection.

CAUSES. Familiar intercourse with an infected person.

CURE. Chancres from the first infection should be now and then touched with lunar caustic, to prevent absorption of the matter that issues from them, and may be healed with cerate alone, or mixed with red præcipitate, spread upon fine soft rag. Dr. Saunders recommends a liniment made
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with calomel one part, and simple ointment two parts. Some of the army surgeons sprinkle the sore with calomel alone : but when these complaints are obstinate, fumigation with cinnabar will be most effective.

Suppurated buboes arising from the first infection, after being opened by caustic, may be dressed like the common abscess. If the edges grow callous and uneven, dress with mercurial ointment, or red præcipitate ointment, now and then interposing the emollient poultice, particularly if the sore and parts around be inflamed and tender. It is sometimes necessary gradually to destroy the surface of the sore, as well as the indurated edges, by repeated applications of the lunar caustic, in order to make way for fresh granulations.

Although the most learned theorists have pronounced these sores, in what is termed the first stage, to be local, yet a gentle mercurial course is always adviseable. The method of introducing mercury into the habit most to be recommended, as being least noxious, and equally efficacious with any other, is by rubbing from one scruple to two of the strong mercurial ointment, composed of equal parts of lard and quicksilver, into the legs or thighs every night: which conjoined with a decoction of sarsaparilla andassafras, or of the woods, by a regular perseverance, has been known to cure the most inveterate disease.

Various are the nostrums compounded of this useful remedy, *Mercury*, and unaccountable the particular attachments to each; but in spite of all mysterious pretensions, it may be found extremely difficult to prove, that every preparation of this kind will not have the desired effect, provided the process be regularly and properly pursued, agreeably to the constitution of the patient. Some will certainly bear mild, others the most acrid preparation, with others a change is necessary : but the in-

roduction by friction is most likely to succeed and agree best with weak relaxed habits and tender bowels. A decoction of sarsaparilla with mezereon greatly assists; and it is well known that the bark and mezereon decoction has accomplished a cure after the use of mercury. It may not be amiss to observe, that the external application of mercury is much more likely to prove efficacious, when made in the line of the lymphatic vessels which lead to an affected gland, than over the gland itself.

SCORBUTIC ULCER.

DESCRIPTION.—The term scorbutic has been applied to various eruptive exulcerations, which are better comprehended under the different species of Herpes. Many inveterate ulcers in the legs are also improperly called scorbutic, since they have little or no tendency to the regular symptoms of scurvy.

The real scorbutic ulcer yields a foetid, sanious, bloody discharge, and a loose spongy flesh rises from the surface and edges of the sore, which are of a livid colour. With seamen, this kind of fungus has been known to shoot repeatedly, and to a great size; at land, the symptoms seldom rise so high.

Several of the ulcers in the legs, with which the poor are particularly affected, arise from, or are accompanied with, a scorbutic state of juices; of which a bloody sanies lodging on the surface, loose spongy gums, and livid spots on the skin, are true characteristic marks.

CAUSES. The causes are numerous; living too long together on salt provisions, being exposed to a moist cold atmosphere, obstructed perspiration, foul air, &c. It depends upon a relaxed state of the solids, and a certain degree of putrescency in the fluids. The ulcer which is commonly called scorbutic, is frequently occasioned by a want of nutritious food.

CURE.

CURE. - In ulcers proceeding from a putrescent state of juices, abstinence from salt provisions, or animal food, is absolutely necessary. The cure greatly depends upon vegetable diet, the antiscorbutic juices, of lemons, oranges, limes, of scurvy-grass, water-creffes, celery, &c. Malt infusion, in the proportion of one of malt, and two or three of boiling water, with or without the addition of a few drops of elixir of vitriol, or the small spirit of vitriol, or spirit of salt, is a powerful remedy: panada boiled with such wort, tamarind water, water mixed with vinegar, cyder, or acidulated with acrid or acescent juices; whey, butter milk, vegetables, fagoe, and oatmeal constitute the most useful and wholesome diet. The bark with spirit of salt, or elixir of vitriol, is universally proper. In the cold scurvy, the warm fallad herbs, mustard and horse-radish infusion, and an infusion or decoction of bark, with the tincture of steel in spirit of salt, are most beneficial.

The most effectual external remedies are, a slight solution of myrrh in barley water, or decoction of bark gently acidulated with spirit of salt, camphorated vitriolic water, dry lint, or pledgits of it dipped in an equal mixture of tincture of myrrh and honey of roses, with slight compress and bandage. If the ulcers be large and painful, a poultice with oatmeal boiled in vinegar and water, or in the infusion of malt, with a small portion of oil, may be applied over the lint; the carrot, or fermenting poultice, made up with a strong decoction of bark, have been of service; but of all remedies the slices of limes or lemons, repeatedly applied to the surface of the sore, are said to be most effective, particularly in the putrescent state: afterwards, dress as in common.

The use of mercury is improper in the true scorbutic ulcer; joined with the bark, it may be useful

in what is commonly called scorbutic, and untended with symptoms of putrescency.

SCROPHULOUS ULCER.

DESCRIPTION. Scrophula most commonly shews itself by indolent knots or swellings in the glands about the ears and neck, afterwards by indurated tumours in the cellular membrane, about the joints, and in the bones themselves. The eyelids, lips, and nose are also commonly affected with redness, soreness, and tumour, which with a delicate complexion and soft skin, are strong characteristics of this disease.

The tumour which this kind of ulcer generally springs from, is soft, moveable, and seldom painful; it proceeds slowly to maturation, and sometimes suddenly disappears, to form on some other part. The discharge from the scrophulous ulcer is first, viscid and glairy, or whitish and curdled, afterwards changes to a watery sanies, and the edges are often much tumefied or thickened. In this disease, collections of pus have remained a great length of time, without much injury or pain, and the tumour will oftentimes continue indolent many years, 'till some new cause shall bring the part into action.

CAUSES. Bad water, crude aliment, and living in low damp situations. It is most probably hereditary and endemic, and is undoubtedly connected with weakness of constitution, particularly affecting the lymphatic system.

CURE. The attempt to cure scrophulous ulcers will be vain, unless the habit is previously corrected by internal remedies.—Mercurial and antimonial preparations with the Peruvian bark are chiefly administered in this disease. The late Dr. Fothergill prescribed invariably a grain or two of calomel every night, and from thirty grains to a dram of the bark powdered, or an ounce of the decoction

three times a day. Plomer's pill, the precipitated sulphur of antimony and calomel, also bark and antimony have been successfully given.

Drinking sea-water and sea-bathing have answered well in recent cases—for which an ounce of Glauber's salts dissolved in a pint or more of water, and taken daily in such quantities as will gently purge, with bathing in river or spring water, are good substitutes. Dr. Mead trusted most frequently to the following treatment.

Bark in powder one ounce; cinnabar of antimony finely lœvigated two drams; mix and divide into twelve doses; one to be taken two or three times a day: two or three grains of cinnamon may be necessarily added.

A pint or more of a decoction of sarsaparilla and sassafras taken daily, is an useful addition, and a purge with rhubarb and nutmeg, or jalap with ginger should be given once in the week.

Cicuta has been strongly recommended in this and cancerous cases; but it has not proved so efficacious, as the accounts from Vienna gave reason to expect. In young persons, the aged, and infirm, it has been known to injure the nervous influence in great degree: yet is less noxious in such habits, when joined with mercurial alteratives. It is necessary to begin with small doses of the Cicuta, and gradually and cautiously to increase them.

The following formulæ have been given with success in a strumous affection of the maxillary and bronchial glands, attended with an obstinate cough, after a long alterative course, sea-bathing, and a journey to Bristol, had proved unsuccessful.

Dried leaves of Hemlock two grains, gradually increased to ten; Syrup of Tolu sufficient to make a mass for small pills, taken twice a day with three spoonfuls of the decoction of bark.

Prepared calomel from one to two grains, storax pill from three to five grains, a pill to be taken at bed time.

After the second week, the decoction was changed for two scruples of bark in powder, with the addition of a few drops of the elixir of vitriol, and a few grains of rhubarb occasionally.

The best external applications to this kind of ulcer are, the various saturnine preparations; they may be used before and after the sores break, if they wear an inflammatory aspect. Dry lint is a good absorbent; and if the edges or parts adjacent be thick and inflamed, dress with Goulard's cerate. Fontanels and gentle compression are necessary auxiliaries. Mercurial ointment has been successfully used to resolve indurated tumours of this kind, which might otherwise turn scirrhus, and incline to be cancerous. Dr. Gregory in his practical lectures recommends oil of tartar per deliquium, or the ley of tartar, as a powerful solvent. Electricity is also esteemed an useful external remedy, in that state, by drawing sparks, or by gradually increased shocks. A scruple or more of burnt sponge three times a day, and a purge with jalap and ginger once a week, has also been known to succeed.

Dr. De Haen, of Vienna, extols the following medicine perhaps too highly.

Nihil album two ounces, egg shell and scuttle shell, of each an ounce; scarlet cloth, six drams; burn them together in a crucible, and reduce to a powder. Half an ounce of it is to be divided into twelve equal parts; one to be taken morning and evening on those days that the purge is not.

The following purge he gives once in six days.

Jalap in powder, from a scruple to half a dram,
root

root of ginger powdered from three to five grains.

Much has been said both for and against giving vent to this abscess; but when there is no great pain or inflammation nature is generally left to herself. One would suppose that the same reasons hold good in this as in other instances, when seated near a bone or joint, and that it cannot be improper to dislodge the matter in such a case by a small opening. In large deep-seated sores of this kind, the opening with seton is most proper, from the like precaution of preventing a free admission of air.

If the ulcers discharge an acrid, corroding, oily, foetid matter, the neighbouring bone is to be suspected. Carious bones in strumous habits are not so easily assisted as from other causes. When the discharge and pain do not tend too much to destroy the strength and animal functions, simple absorbent applications and sea-bathing have proved the best palliatives, and nature has sometimes brought forward the cure.

The diet should be of the dry kind, and easy of digestion; animal food and generous wine, eggs also, are proper in this complaint: lime-water and milk, in the proportion of two of the latter to one of the former, have been of use towards lessening the quantity of discharge, and drying up the sore; particularly if joined with the bark. Moderate exercise and dry air are also necessary. Pork, butter, cheese, smoked meats, fish and high sauces should be avoided.

The obstruction and thickness of the œsophagus, or what is commonly called the narrow swallow, sometimes arises from scrophula. This calamitous disease, if taken in time, may be remedied by a slight course of mercury by unction, and occasional purges. A gentle spitting of five or six weeks,
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has proved effective, in two cases under the Author's care.

SCIRRHUS AND CANCER.

DESCRIPTION. Glandular parts being less susceptible of inflammation and suppuration than membranous, are most subject to these complaints. The parts chiefly affected with scirrhus are, internally, the liver, spleen, pancreas, mesentery, and uterus; externally, the eye and eyelid, nose, lips, tongue, fauces, neck, breasts, armpits, groin, penis, and testis: the lips and breast are the most frequent seats of these disorders.

The scirrhus which forms of itself, generally begins with a smooth, roundish, slipping knot, seldom bigger than a large hazel nut; gradually increases, with little or no pain; and sometimes stops in its growth, and continues in an indolent state for many years. That which is occasioned by external injury, or some inflammatory cause, is commonly of a larger size at first, and is at times painful. Should the constitution become infirm and injured, which often happens with women, about the time that menstruation ceases, the tumour, especially that which is formed in the breast, begins to increase, grows harder, more painful, and of an irregular form; the veins, nerves, and neighbouring glands being compressed, their functions are impeded. This may be called the *second*, or *scirrhus* stage.

The *third*, or *occult cancerous* stage, is known by a frequent sense of heat and itching, a pricking and darting pain at intervals in and about the tumour, and the skin over the part affected losing its natural complexion. The tumour increasing, tension comes on, and the teguments begin to appear of a shining reddish colour; in a short time the part is constantly afflicted with throbbing lancinating pain, together with the sense of a burning biting heat; the colour changes

changes to a dark livid red, and the veins grow varicose and winding.

Now follows the *fourth* stage, or *open ulcerated cancer*. The skin being eroded, a thin, blackish corrosive matter is discharged from the sore, which spreads; the edges swell, grow inverted, and appear like a compressed indurated fungus: the burning cutting pain destroys the patient's rest and appetite; absorption takes place and contaminates the general system; the disease then seizes other parts, the body wastes, hectic symptoms, hæmorrhage, and deliquia follow, with a quick intermitting pulse, cold partial sweats, and probably a purging, which, in a short time, produce a long wished-for dissolution.

Sometimes the matter excavates the indurated parts, forming a deep, irregular, and foul ulcer, with jagged edges; a profuse hæmorrhage often happens in this deplorable state of the disease; at other times, the texture of the flesh is so loose and spongy as to form a considerable fungus, that bleeds repeatedly and profusely.

There is also another kind of cancer, which makes its attack under the form of a scale or crusty scab: this being repeatedly cast off and renewed, leaves an oozing moisture on the skin, and forms a flat, eroding ulcer.

Venereal, scorbutic, and scrophulous ulcers, wens also, and indurated tumours on membranous parts, will sometimes prove cancerous.

The danger and symptoms vary according to the state of the constitution, the particular stage of the complaint, and the nature and importance of its situation.

CAUSES. Want of proper food and nourishment, external injury, sudden suppression of the menses or hæmorrhoides, celibacy, sudden cold, irregularity in the non-naturals, also a reception of the cancerous virus into the habit.

Scirrhus in the liver and abdominal viscera is produced, by heat of climate, immoderate use of spirituous liquors, and obstruction. Scirrhus in the womb, from difficult labour, neglected prolapsus, and constipated fæces, and generally manifests itself after the cessation of the menstrual discharge.

CURE. The most favourable opportunity for dissolving the tumour is at the beginning of the scirrhus state, an alterative mercurial course, with now and then a purge, will then prove effectual; whereas, when the tumour is inorganic, extirpation only will answer.

Cicuta has been highly recommended, but has not produced so much benefit as was expected: the leaves dried by a gentle heat, powdered, and kept in a bottle close stopped, are preferable to the extract. Poultices made with the expressed juice or powdered leaves, and mixed up with white bread or linseed meal, are recommended as solvents; but when the tumour is as it were impenetrably hard, extirpation is the only remedy. This operation performed with the knife, has succeeded in every stage of the complaint, even where the ribs were carious, and the tumour adhered greatly. But how much more easy, safe, and certain in its effect, would the operation be, were it submitted to in due time; to ascertain and enforce which, the following hints are here given from a paper written some time since by the Author of this book, under the title of "*Remarks on the Nature and Treatment of Cancers,*" and published in the London Medical Journal, vol. v. p. 73.

"What pity it is, that in this disease, the opportunity of procuring relief is so often lost! since in the simple, detached, indurated state, excision is attended comparatively with little pain, with no danger, and perfect success. Terror and false hope, in cases of this sort, are too often suffered to get the better of reason and resolution. Even men of great

great judgment in the profession have sometimes flattered themselves and their patients with the hopes of avoiding an operation, which, in the early stage of the disease, might produce so much comfort and security. To obviate such mischief, I beg leave to present the following hints; they may serve to shorten the progress of an evil, which, if neglected, would be productive of the most dangerous consequences.

“ 1. In its infant state, when the tumour is round, smooth, and not hard to the touch, the disease *often* yields to a gentle alterative course.

“ 2. When the tumour is large, round, smooth, and indurated, it *seldom* gives way to that mode of treatment.

“ 3. When hard, unequal, and attended with pricking pain, it *scarcely ever* admits of relief from such means; and I believe *never*, when it has attained what may be considered as a *fourth stage*; that is, when the tumour is of a stony hardness, very unequal, and attended with acute darting pains. In this latter stage, when the breast loses its natural colour, and the nipple is drawn in, the knife should be submitted to without hesitation: indeed from duly considering the progress of the disease, as specified in the foregoing hints, it is certain that the safest and most proper periods for extirpation are in the second and third stages.”

Scirrhus in consequence of inflammation has been greatly relieved by electricity, particularly in the breast of a woman, and on the testis and epididymis of a soldier after hernia humoralis. Both cases had resisted every other means under the direction of an able practitioner for near a twelvemonth. Extirpation had been earnestly recommended, but firmly objected to by both. Several strokes were given through the parts affected every morning, and gradually increased to a powerful degree. The testicle, in about three months, was reduced full two-thirds,
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and has remained free from much inconvenience for several years. The tumour in the breast was by long perseverance very much reduced in size, and the patient, though at this time past fifty years of age, feels no other trouble than a kind of stricture about the part.

The open or ulcerated cancer has been treated with some success by the following means:

Crumb of white bread, or linseed meal three parts; hemlock leaves powdered one part; mix into a poultice with chamomile infusion, and apply to the ulcerated, indurated, and discoloured part every six or eight hours, adding each time a little pure oil.

The fresh leaves may be used in less proportion during summer; and the root of hemlock scraped, and beat up with the bread or meal, in the winter time.

The following pills may be given every night at bed time; or ten or twelve drops of the sublimate solution twice a day, with not less than half a pint of the sarsaparilla decoction; a dram of bark also is to be taken two or three times daily in a cup of the decoction with milk.

Calomel prepared one grain; camphor, powdered with a drop of spirit of wine, three grains; and one or two grains of the opiate pill; syrup a sufficient quantity; to be formed into two pills.

Strained Opium and fine white soap, each equal parts; make into a mass for pills of one or two grains each.

Corrosive Mercury sublimate, twelve grains; crude sal ammoniac, thirty grains; spirit of wine 3vj; spirit of lavender, two drams. Mix.

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From eight to twelve of these drops, with from three to five of tincture of Opium, to be taken in full half a pint of sarsaparilla decoction mixed with a little milk, twice a day. Each dose of the solution ought to be taken in the quantity of decoction; barley water or gruel here ordered, otherwise the bowels will be affected by it, particularly in irritable habits.

If the discharge be great, and the surface be irregular and spongy, the sore may be fumigated with the following powder :

Gums olibanum, mastich, and benjamin, each equal parts rubbed well into powder; some of it is to be repeatedly thrown upon a heated iron, and the fumes are to be conveyed by means of a proper tube, to the ulcerated part. The same proportion of cinnabar has been sometimes added to advantage.

The lunar caustic has been applied with success to the incipient cancer, particularly to the flat eroding kind.

In the method herein mentioned, the mercurial course is not meant to occasion the least degree of spitting; it may therefore be necessary in some habits, to relax in its use occasionally, and to throw off its effect on the mouth or salivary glands by a gentle laxative or two. The Bark is a necessary assistant to the scorbutic or relaxed habit; in short, the course is seldom perfect without it. It should be understood, that only one of the mercurial preparations is to be administered at a time.

It is a received opinion, that this disease is originally local; from the favourable change which has almost immediately followed the use of the foregoing remedies, and from extirpation having been attended with perfect success in the worst stage of the disease, it may be thought so in the ulcerated state. When the habit is generally contaminated, is not
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the effect produced by a pre-existent acrid state of the juices, and frequent absorption of the foetid sanious matter, which lodges from time to time on the surface of the sore? If so, the true curative intentions are, to correct the habit, and to prevent absorption; which design the means here recommended bid fair to accomplish, viz. the poultice and fumigation to correct the discharge, and prevent absorption; the bark and mercurials to improve the habit; and the opiate to alleviate pain.

The bark malt infusion with marine acid, cicuta, and the opiate pill are esteemed the best palliatives internally, and the carrot poultice externally. It may here be allowed to observe, that the bark is generally administered in too small doses; many an obstinate intermittent which has defeated the effect of several ounces of it taken in the usual mode, has been effectually routed; by giving six or eight drams of it, in doses of two drams, at proper intervals, within the first ten or twelve hours of intermission.

Chimney-sweepers are subject to the flat eroding cancer about the privities. It begins with a reddish pimple upon the glans, prepuce, or scrotum; the dry head of which being rubbed off, the discharge erodes the subjacent and neighbouring parts. In two cases of this kind, the cataplasm with linseed meal and the root of hemlock, the sublimate drops twice a day, with a pint and half of the decoction of sarsaparilla with saffrafras daily, proved highly beneficial. In one the glans penis sloughed entirely off, in the other the disease began with a bulbous swelling behind the glans, the superior part of which was soon destroyed, together with a part of the corpus cavernosum. Both the sores were healed; the first person quitted the business, and continued well; the latter could not be persuaded to relinquish the employ, and about the end of three years the disorder broke out afresh, and soon reach-

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ed the groin and the region of the ossa-pubis, and formed an extensive tumour, which put an end to his existence.

Dr. Hamilton, of Edinburgh, is said to have treated a cancerous ulcer of this kind on the scrotum and penis successfully, by repeated daily immersions for a quarter of an hour together up to the armpits in the following decoction :

Half a pound of the seeds of the *cicuta vulgaris* tied up loosely in a bag, four large handfuls of the leaves and flowers, to be boiled in seven pailfuls (eight English gallons) of water to six, the whole being put into a wooden trough, with twelve pailfuls of cold water added to it, the patient was immersed up to the armpits for the space of fifteen minutes.—The first bathing lessened the pain; the second lessened the discharge, and changed its appearance from sanious and foetid to purulent; and in a month's time he was cured. As the sore mended, the immersion was continued longer, up to half an hour or more. The cicatrix was irregular, and assumed a puffed up, unseemly appearance. Doctor Hamilton recommends its use in cancerous rectum and uterus, and the application to be made through a long flexible tube by injection during immersion.

In this disease, the diet should be particularly attended to; milk, broths, rice, panada, new-laid eggs, sago, tapioca, and millet, are the most proper kinds of nutriment. Salop, cocoa, tea, chocolate, beef tea, asses milk, turnips and carrots in their season, with every day a moderate meal on fresh beef or mutton, have, in their turns, been the subsistence of a person afflicted with an occult cancer for ten years past.

The chief points to be attended to in extirpating scirrhus or cancerous tumours are, to preserve such skin as is not diseased, or firmly attached to the subjacent parts, to separate the whole of the diseased part from that which is sound, to remove every in-

durated part in the neighbourhood of the tumour; and, if possible, to heal, by the first intention. The present mode of operating and treating tumours of this kind is fully described under the article, *Disorders of the Breasts*.

SPINA VENTOSA.

DESCRIPTION. This disorder is generally understood to be a tumour which takes its rise in the internal substance of the bone. It is frequently hard and without pain; sometimes it appears as if puffed up with air, and is attended with shooting, pricking pain, from which indications it has its name.

The spina ventosa differs from a common caries, by being the production of an abscess, or disease in the internal substance of the bone. It gradually extends itself to the periosteum and common integuments, which cover and lie near the part affected, and in time breaks out into an ulcer of the most stubborn kind. It may easily be distinguished from the ricketty swelling, as that disorder more generally affects the habit, particularly about the epiphyses of the wrists and ankles, and is attended with irregular tumours without pain. There are also some other swellings in the bones, which remain free from pain and erosion throughout life.

The spina ventosa is not confined to the cylindrical bones; those of the head, face, back, and chest are also subject to it, although the former are the most frequent seats of that disorder. It is most injurious when fixed on the heads and processes of bones.

CAUSES. Scorbutic, scrophulous, or venereal diathesis affecting the lamellæ, or medullary substance of the bone, or injury done to the external vessels corresponding with those of the internal substance.

CURE. In the milder species of this disease, when it proceeds from external injury, cold applications
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with Goulard's water and the like, have done good in the early stage, when it arises from a diseased habit, an alterative mercurial course, with decoction of sarsaparilla, or of the woods, together with ascetic and milk diet, have restrained its progress. It should be observed that disease from accidents is generally confined to the external laminae, and seldom produce a deep affection of the cylindrical bones, unless there be some predisposing cause in the constitution, which the surgeon ought strictly to attend to.

When the incumbent parts begin to be discoloured, and are troubled with a pricking pain and burning, an ulcer is certainly forming without side the bone; at that time, an opening should be made sufficient to lay bare the diseased part of the bone; if of moderate extent, a caustic may be applied, otherwise the knife will answer better. Perforations as directed under the article carious ulcer, then become necessary expedients; and such dressings are to be applied as will tend to absorb the discharge, and restrain the flesh from spreading over the denuded part of the bone, until the diseased part be separated, or the discharge be dried up.

When the whole of the substance is diseased, particularly if near a joint, amputation is generally necessary; but as M. Le Dran has justly observed, the operation should not be performed on the bone that bears the disease.

It has been already noticed that the substance of the tibia may be cast out and regenerated, and the ingenious Mr. Park, of Liverpool, has given proofs of the possibility of removing the heads of bones, and afterwards healing.

DE NECROSI.

DESCRIPTION. M. Bouffelin, in his observations on this complaint, evidently proves, that in cylindrical

dricul bones, nature gradually separates the dead parts from the living; and that a portion of bony matter is effused, and enclosed by the old dead bone in a kind of case; also, that by removing the latter when detached, the new bone will connect itself with the extreme living ends of the old one, and in process of time, acquire perfect solidity.

The marks of this disease are, acute pain followed by a swelling of the soft parts, external inflammation, ending in many small abscesses, which penetrate into that part where the detached piece of bone is to be felt; a good looking pus, except when complicated with small portions of bone, and free from a black tinge; and an enlargement generally confined to the bony part, and corresponding with the extent of the disease.

CURE. Mons. Bouffelin observes, that if the disease be of long standing, the suppuration lessens, several portions of bones have passed through the sinusses, inflammation disappear, and the new bone hath obtained great firmness; there is great reason to conclude, that the dead part of the bone is separated and dissolved, and that nature has been able to effect the cure, which he thinks will be oftimes the case. Still he is of opinion, that the tediousness of her process, the discharge, pain, and other circumstances, may require the assistance of art. He advises waiting until it is certain that the dead part of the bone is absolutely detached, and directs the operator to expose the diseased part, by cutting into or removing the integuments, and sufficiently extending the opening in the bone, so as to take in all the sinusses in the substance of it; and in proportion to the size of the detached portion, the moveable state of which is mostly to be perceived by passing the probe through one of the sinuous ulcers.

In one of the most tedious cases given by Mons. Bouffelin, he mentions removing the diseased integuments, so as to expose the chief parts of the detached

detached bone, and give room for the use of the rugine and a convex saw; with which he penetrated into the bone, and the upper and lower parts of the wound, to the depth of half an inch; and then, with difficulty, removed the intermediate space of bone with the assistance of a mallet and chissel, on account of its uncommon hardness. The wound was dressed as in common, except that the first dressing was suffered to remain 'till it was so moist as to be easily removed, which did not happen 'till the fifth day. A symptomatic fever came on the third day, which soon gave way to the antiphlogistic treatment, and the wound was nearly healed in about six months from the operation. For further information, vide Ruffel on Necrosis.

WHITE SWELLING.

DESCRIPTION. Scarce any disease is more painful, obstinate, and dangerous in its nature than this. It seldom attacks any other parts but the knees and ankles. The joint has been commonly considered as the seat of this complaint, but it is mostly seated without the capsular ligament; it may therefore be properly divided into two kinds, the exterior and interior.

The first is of the milder kind, and comes on with an acute pain over the joint, and a swelling that seems to extend itself to the tendinous expansions that surround it. The part where the pain is most violent, rises with a puffy elastic tumour, the cellular membrane gradually thickens, and the swelling grows uniform, which is sometimes the case from the beginning. Tension without discolouration, stiffness in the joint, and contraction in the flexor tendons, ensue; the ligamentous parts and lymphatic glands, together with the sacculi mucosi near the diseased part, become enlarged, abscesses form repeatedly, which at first discharge a purulent

matter, afterwards a thin foetid sanies; the patient's strength is worn down by continued pain and discharge, absorption takes place; a weak quick pulse, colliquative sweats and stools are the consequents; and unless the limb be timely removed, the patient falls a victim.

In complaints of this kind of long continuance, the capsular ligament may be eroded; but that seldom happens, except when the disease originates in the joint itself, or in the epiphysis.

The interior kind is more inveterate; in this the pain is more acute and confined than the former; and though the swelling is not so extensive at first, yet in its progress, both that and the pain increase considerably; the joint is sensibly enlarged, the tumour grows elastic to the touch, varicose veins appear on its surface, and abscesses form, which discharge a thin foetid matter; the bones are thoroughly carious, sweats and purgings come on successively, and the patient becomes a miserable object.

CAUSES. In the outward species, the tendinous and ligamentous expansions are first affected. Bruises, sprains, and other external injuries producing inflammation on the parts covering the joints, may be reckoned as causes. Rheumatic or other inflammatory affection on those parts, also produce this species. The second kind derives its origin most commonly from a strumous habit alone, or in concurrence with some external injury.

CURE. In the first stage of the exterior species, it will be proper to bleed and use cooling remedies and diet. Topical bleeding with leeches and by cupping, are the modes most practised; a pill with calomel and camphor for two or three nights successively, followed by a cooling purge, and occasionally repeated; Goulard's water, Mindererus's spirit, or vinegar with crude sal ammoniac may be freely applied. Should these means prove in-
effective,

effective, blisters or Barbadoes tar are recommended.

When the inflammation appears to be removed, mercurial friction with intervening purges, assisted with a laced kneeband, or convenient bandage, have proved useful. Should the disorder be so far advanced as to form abscesses, the matter ought to be discharged as soon as possible, if the tumour be large, by incision with seton.

The stiffness of the joint, and rigidity of the tendons, will most commonly yield to the repeated use of the vapour bath, succeeded by neat's foot oil. The omentum or caul and guts of a new-born calf, sheep, or other animal, applied for three or four hours every day, or plunging the part affected, into the body of a newly killed animal, or covering it up with the intestines taken out warm, and quick as possible, and wrapped round the part as long as they shall retain their vital heat, have been of singular use.

If, notwithstanding the repeated application of these means, the disease should increase, and the constitution, from pain, discharge, and fever, be sinking in extreme, especially when the disorder lies near the larger joints, the only resource is amputation. The electric shock is said to have been of use in the early stage of this complaint.

In the worst kind, the habit must be corrected; mercurial unction, antimonials, and bark, are the most likely means to succeed, after the inflammation and pain have been relieved, as before directed. In the smaller joints, the diseased bone has been known to separate, and the cure has soon followed. Yet in the larger joints, some young subjects, too timid to submit to the operation, by the assistance of opiates, lime-water and milk, the bark, and proper diet, have been able to struggle through the very worst stage of the disorder, the

discharge having gradually dried up, and the joint being completely ankylosed,

TINEA CAPITIS.

DESCRIPTION. This disorder more particularly affects the hairy scalp. Some writers consider it as a species of the herpes exedens; but from the slowness of its progress, and its external appearances, one would rather suppose it partakes of the lepra. Sauvages says, that the lepra ichthyosis frequently accompanies this disease; there seems to be little difference between that and the tinea, except that the scales of the latter become thickened in a greater degree, which particular may arise from the excretory juice near the bulbous roots of the hair on the head, being naturally of a more viscid nature than that which issues from other parts. It frequently begins with an increased quantity of scurf upon the head.

The Tinea may be divided into two kinds, the dry and the moist. The first forms into a white crust, or scab, which sometimes extends over the forehead; the last is of a more thin acrid nature, and does not so readily produce the thick scab, but eats deeper into and spreads further about the scalp, forming, as it were, a kind of quagmire under the integuments. Both sorts are attended with much itching, and a very disagreeable scent. It is more or less obstinate, according as it is entangled with the hair; and when the roots of the hair, which seem to be the seats of the complaint, are greatly swelled, it becomes extremely difficult to cure.

This species of acrimony may be communicated by contagion; wearing the same cap, sleeping on the same pillow, or even using the same comb, will convey it from the head of one person to that of another, and produce disease. Children are much more susceptible than adults; and when greatly afflicted, their

their complexions grow wan, and the constitution suffers both from absorption, and the partial obstruction of the perspirable matter, which is contaminated with the acrid matter lodged under the scabs.

The crustæ lacteæ which are dry, white, crusty scabs, formed on different parts of the head, face, and neck of children, also the moist ulcerations of the scalp called aches, are most probably of the same tribe.

CAUSES. The tinea may arise from external communication, from a morbid state of the excretory juice at the roots of the hair, which may or may not be contaminated, with a general acrimony of the habit, want of cleanliness, and an impoverished state of the blood.

CURE. Former practitioners supposing this complaint to arise from a vitiated state of the juices, reprobated the use of repellents, and never attempted to cure the slightest degree of the disease, without strong evacuants, and a strict alterative course; some of modern date consider this, with most diseases producing ulceration in the skin, as merely local, and often venture upon their use without the least precaution; either of which extremes must be bad, the former by administering active medicines without an adequate cause; the latter from not duly considering the mischiefs which sometimes affect the general system, when acrid matter is suddenly absorbed. Surely it must be consistent with reason and sound practice to be governed, in all such matters, by the nature of the habit, and the quantity or quality of the discharge.

In the early stage, the hair should be kept close cut or shaved, and the head washed with sea water twice a day; if sea water cannot be conveniently had, a moderate solution of common salt, or Epsom salt, in water, may be substituted, now and then giving a purge with rhubarb, or jalap and cream of tartar.

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In the more advanced state, the parts should be repeatedly smeared over with tar ointment, made of equal parts of the best Stockholm tar and mutton suet, slowly melted together; gently rubbing off the scab with a soft piece of flannel, and when the sores are properly cleansed, applying rags wetted with camphorated vitriolic water, or a solution of salt of steel, or dabbing them with a weak solution of corrosive sublimate in water, in no greater proportion than eight grains to a pint. Cleansing the ulcerations with tar ointment, and dressing them lightly with the mercury præcipitate ointment of the London Dispensatory, have also proved effective.

When the disease is so far advanced, that the roots of the hairs are much thickened, and the scalp is deeply affected, no remedy is likely to prove effectual without removing the hairs by the roots; which may be done at different times, and with less pain than usual, by suffering the hair to grow a little, then applying a portion of pitch plaster to the part intended to be depilated, and afterwards drawing off the hairs, according to the course in which they naturally grow. At each removal the part should be sponged clean with warm water, and first touched with a liniment composed of one part white præcipitate ointment, and two of white cerate, afterwards, dabbed with the camphorated vitriolic water, or with the weak solution of sublimate just mentioned.

Upon the first attempt to cure in the latter stages, it will be proper to form an artificial outlet, and to purge with rhubarb or jalap, with calomel or a dose of salts, according to the state of the discharge, which should be repeated occasionally; and on the intervening days, a powder with crude antimony prepared, and a few grains of gum guaiacum, or the alterative powder, with decoction of sarsaparilla andassafras, mentioned under the article scrophulous ulcer;

ulcer; or Dr. Heberden's Elect. *versus leprum*, as follows:

Crude antimony prepared, and pale bark in powder, each half an ounce; bark of *assafras* powdered, one dram and a half. Rub these well together. From one scruple to a dram two or three times a day, with half a pint of elm-bark decoction.

It may be proper to observe, that in very young persons calomel will be unnecessary when the mercurials are applied externally. When such alteratives are ordered, a purge should be given once in six or seven days.

Lime water and milk duly proportioned, as in the article scrophulous ulcer, is proper both externally and internally in the moist kind; also bark infused in lime-water. A blister, issue, or seton should be opened in the nape of the neck, at the very first of the process.

Dr. Duncan, of Edinburgh, recommends first the application of a white bread poultice, or the crumb of white bread, to be moistened well with the mercurial lotion just mentioned; afterwards, the following liniment:

Verdigrease finely powdered, half a dram; simple unguent an ounce and an half, or two ounces: Mix. Half a dram to be applied night and morning.

OEDEMA.

DESCRIPTION. This kind of tumour affects different parts of the body, particularly the legs and feet; it is often circumscribed or confined, sometimes more generally diffused; is cold and pallid, attended with little or no pain; retains the print of the finger when pressed upon it, and occasions no great alteration in the skin, except tension and a shining

shining smoothness. This is called by some, *œdema frigidum*, to distinguish it from another kind, named *callidum*, which is commonly mixed with erysipelas, and yields a glowing heat, is sometimes free from redness, but attended with a deep seated pain and girding tightness.

CAUSES. Weakness and obstruction in the lymphatic system, irregularity in diet, intermittents, hæmorrhage, asthma, phthisis, a sedentary life, menstrual obstructions, induration of the mesenteric glands, and compression of the abdominal vessels.

CURE. It is sometimes dangerous to use repellents in the dispersion of these tumours: the habit ought to be altered and strengthened by internal remedies and proper regimen. The curative intention ought also to be adapted to the nature of the cause, and the prevalent disease in the constitution. In the relaxed and aged habit, warm gentle laxatives, proper nutriment, plenty of bark in red wine, and chalybeates, are most likely to relieve: dry frictions and the spiral bandage, or laced stockings, are necessary assistants. The diet should in general be stimulating and generous, and the air dry and warm. The hot acrimonious kind, which generally attends bilious erysipelatous habits, is to be treated according to the directions for *Erysipelas*.

ENCYSTED TUMOURS.

DESCRIPTION. These tumours appear in different parts of the body, and are contained in membranous bags, formed by the cellular membrane being compressed and condensed; they contain fluids of various consistencies, from the particular state of which they are nominally distinguished.

When the contents are of a pappy consistence, resembling paste or a poultice, the tumour is called *Atheroma*; if it hath a resemblance to honey, *Meliceris*; and if suet like, *Steatoma*. These tumours are mostly very small at first, and increase slowly,
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till they arrive at an enormous size. Mr. Petit mentions one which he extirpated, that weighed upwards of twenty pounds. They form without redness, heat, or pain; but when large and scirrhus, much pain and danger may follow.

The *Atheroma* is soft, regular, and most frequent, and is chiefly attendant on scrophulous habits; the *Meliceris* is also not unfrequent; and the *Steatoma* commonly attacks the most healthy. The two first are not so easily to be distinguished from each other; the last is more firm to the touch than the former, and does not admit of fluctuation.

These tumours are generally termed wens; but such only as are formed of the membranous or fleshy parts are entitled to this appellation: indeed, a small portion of lymph is sometimes found in the centre of those swellings.

The *Ganglion* is a species of encysted tumour of the meliceris kind, which is formed within the tendinous theca; its contents mostly resemble the white of an egg.

CAUSE. Encysted tumours may be reasonably supposed to originate from injury done to the cellular and adipose membrane, together with a partial impediment to absorption.

Ganglions are commonly produced from the same causes.

CURE. Encysted tumours, like those of the scirrhus kind, ought to be more attended to in the infant state: rubbing them at that time with mercurial ointment will sometimes disperse them. Some have been brought to mature by means of the warm gum plaster, or such like application; but the quickest and most eligible method of getting rid of them is by excision: taking care to remove the whole of the cyst, if practicable, with safety. Those which are small and have a slender base may be extirpated by ligature.

If in the operation by excision the cyst should be wounded,

wounded, which is often done when the tumour runs deep within the interstices of the muscles, the contents should be pressed out, and as much of the cyst should be dissected away as can be done with convenience and safety: the remainder may be destroyed with mild escharotics, or left to suppurate and dissolve away.

In every case where the tumour is not pendulous or large, a strait incision in its full extent will give sufficient room to dissect away the cyst, and the wound may be afterwards managed according to the treatment laid down under the article, *Disorders of the Breast*. Endeavouring, if at all practicable, to heal by the first intention. If the tumour be large, a cruciform incision, or transverse section on one side, may afford convenient room for its removal. In order to render the skin, in large tumours, more suitable to the purpose of healing by the first intention, it will be convenient to take away a part of the loose teguments in such direction as will best admit of the edges being placed in regular contact with each other.

Incision with seton has sometimes answered in the softer kind of encysted tumour.

Ganglions have been frequently removed by pressure with thin sheet lead and proper bandage, or by a sudden blow. Many which greatly impeded the use of the fingers and wrist, have been dispersed by gently and repeatedly beating them with a small thick ferula, so as not to bruise the part, or occasion much pain. If they should resist these attempts, excision, as in the encysted tumour, will be necessary. For a singular operation on the wrist in a tumour of this kind, vide Mr. Warner's Cases in Surgery; wherein he gives a particular instance of the necessity for making the external wound of full extent with the tumour.

EMPHYSEMA.

DESCRIPTION. A soft, flatulent tumour, formed under the skin, sometimes of great thickness, and spreading throughout the body; the face being so distended, as not to leave the least trace of a feature. Upon pressure, the air withdraws itself with a crackling noise, but the part compressed immediately returns to its former state. It is attendant on wounds that penetrate the cavity of the thorax, on injuries of the lungs received by the points of a fractured rib, or on wounds in the larynx: it is also partially produced in contused wounds about the head, face, eyelids, scrotum, &c. If the air should escape from the lungs into the thorax, relief must be speedily administered.

CAUSES. It is occasioned from confined rarefied air forcing itself into the cellular membrane, or air finding its way into the cells by the lips of a wound: putridity is also a cause.

CURE. The natural indication of a cure is to expel the confined air as soon as possible, which is most likely to be affected, by pressing the included fluid, out at an orifice in the skin or the wound, and applying thick compresses wetted with camphorated spirits, with a strict bandage over all.

Incisions or punctures should be made into the cellular membrane in different parts of the body, through which the air may be repeatedly excluded by pressure; after which compresses dipped in *Mindererus's* spirit, or sharp vinegar, and a tight bandage, should be applied to the different parts where the scarifications were made. When it arises from a wound, it may be proper to enlarge the opening; and if respiration be difficult, blood must be drawn from the arm, repeatedly, as in the pleurisy. Nitre and antiphlogistics are also necessary, particularly when a rib is so fractured as to produce this untoward complaint.

When a quantity of air is confined in the cavity of the breast, and the vital functions are dangerously obstructed, the paracentesis is the chief remedy.

WARTS.

DESCRIPTION. These are excrescences of the cutis connected with the cuticle, which infect most parts of the external surface of the body, but more particularly the hands; they are of different size and figure, broad and flat, slender, or pendulous: some break through the cuticle and become irregular in their surfaces, and from their appearances are termed seeded warts.

Warts sometimes grow to a large size, and are very troublesome and tender, particularly those on the eyelids; if not meddled with, they will generally suppurate and dissolve away; but when irritated, are apt to grow hard, dry and fungous. They may be removed by abscission or ligature, with a single horse-hair, regularly and repeatedly tightened. When the aspect of those which are seated on the lips, face, and eyelids, is of the livid cast, and the adjacent parts are hard, tender, and inflamed, there is some danger of their proving cancerous.

CURE. Warts that have a slender basis may be removed by means of a single hair ligature, or a fine silken thread waxed. They are also to be extirpated by abscission with a pair of sharp-pointed scissors, or a small scalpel. Caustic applications are also used to destroy them; but care must be taken to limit their action, by touching the part lightly and often, when there is reason to fear injuring a subjacent ligament or tendon. Oil of vitriol, aqua fortis, or butter of antimony are often resorted to for that purpose, but require caution. The juice of celandine and spurge laurel have proved efficacious in the soft and smaller kind. Some have been removed

removed by rubbing them with crude sal ammoniac, or using a slight solution of it in oxycrate, or by dabbing them with the lees of tartar.

CORNS are a sort of horny excrescence growing on the feet and toes, and on the hands of labourers. These callosities resemble an inverted wart, and are seated in the cutis and cuticle, arise chiefly from pressure and attrition, and when rooted near a tendon become extremely painful.

The easiest and best mode of getting rid of these troublesome companions is, to avoid all uneasy pressure, and apply a piece of plaster, little more than the size of the corn, spread with the soap or simple litharge plaster, to be kept close on the part for four or five days together, in order to soften its surface; this being removed, the sodden part is to be pared off, but by no means so low as to touch the quick; the whole to be renewed and repeated once in five or six days, till the corn appears likely to turn out at the root, or waste away: it will be useful to soak the part in bran and water, previous to each cutting.

Tumours called *Onions* are larger and more extensively seated than corns, and are extremely difficult to get rid of; they sometimes inflame and suppurate, and require some art to heal them. The suppurative cataplasm and light easy dressings are the best applications. There are instances of persons submitting to have a toe amputated, to get rid of this painful guest.

WOUNDS IN GENERAL.

DESCRIPTION. A wound is a recent disunion of the soft parts of the body and the connecting teguments.

A wound is more or less important, according to its size, the sharpness of the instrument with which it was made, the part of the body in which it

was received, the nature of the parts injured, and the state of the habit.

The numerous distinctions which authors generally make with respect to this subject, rather tend to perplex than explain it. The whole may be comprehended under the following heads, viz. the simple incised, the lacerated, and the complicated.

The *Simple Incised Wound* is a mere separation of parts, and in a healthy subject, generally admits of the union which is termed healing by the first intention.

The *Lacerated Wound* is when the separation is irregular; it may be produced by violent distention, laceration, or puncture, and is of a much worse kind than the former.

The *Complicated Wound* is accompanied with one or more of the following circumstances; viz. contusion, loss of substance, or some violent symptom. Wounds, where a large blood vessel, a nerve, tendon, or the bone is injured, are of this kind: gunshot and venomous wounds may be also ranked in this class, together with those that are produced by thorns, splinters, glass, &c. when the extraneous body is lodged in the part.

An incised wound generally bleeds freely, a contused wound seldom does. The pain, inflammation, &c. are more violent in the latter, and, if the injury be great, gangrene is not unlikely to follow.

When an artery is wounded, the blood rushes out by starts, and is of a florid colour; if a vein only, the blood is of a darker hue, and flows in a moderate and equal stream.

A sharp shooting pain, attended with inflammation, spasmodic contraction, and rigidity, with a loss of sense and motion in the part, indicates a principal nerve or tendon to be injured; rigor, fever, delirium, and other alarming symptoms sometimes succeed, subfultus tendinum, locked jaw, and even death have proved the consequences of such wounds.

wounds. A slight cut in the extremities, with a jagged or rough edged instrument, in irritable habits, has been sometimes attended with a locked jaw.

When a fleshy part only is wounded, the pain is generally obtuse, and the symptoms are moderate.

Tumour, heat, redness, inflammation, and pulsation in the part, are the common attendants of wounds; but if no tumour or inflammation arise about the wound, it proves that the vital heat is defective and threatens ill: should these symptoms be excessive, gangrene may follow. Wounds in the joints, lungs, belly, or spinal marrow, are always dangerous; the latter always produce palsy in the nether parts.

Wounds of the *Internal Parts*. The seat and extent of such wounds are to be ascertained by the direction, the nature of the discharge, and the difficulty attending the action or function of particular parts.

In wounds of the *Trachea*, or *Windpipe*, the breath passes out at the orifice, blood is coughed up, and the patient finds great difficulty in speaking.

If the *Œsophagus*, or *Gullet*, be wounded, the aliment finds its way through the opening, deglutition is painful and obstructed; hiccup, vomiting, deliquium, and cold sweats, commonly attend such an injury.

Wounds of the *Lungs* are known by coughing up frothy florid blood, and by the same flowing through the opening, pain and difficulty of breathing, deliquium, irregular pulse, &c. and from the air in inspiration making its way through the wound.

Symptoms of wounds in the *Diaphragm* are difficulty of breathing, hoarseness, hæmoptoe, and pain under the false ribs.

In wounds of the *Spinal Marrow*, the parts, receiving nerves from thence beneath the wound, become paralytic.

Wounds of the *Receptacle of the Chyle*, or *Thoracic Duct*,

Duct, discharge a light greyish fluid, and the patient shrinks and grows weak.

Wounds of the *Liver* and *Spleen*, discharge a blackish coloured blood from the right or left hypochondrium, and are attended with great difficulty of breathing. In affections of the liver, a pain is mostly felt in the right arm and shoulder.

Wounds of the *Stomach* are attended with the same symptoms as those of the *Gullet*.

When chyle and indigested aliment are discharged through a wound, the *Small Intestines* are injured; if the excrements shew themselves, the *Large Intestines* are most probably hurt.

The *Gall-Bladder*, or *Duodenum*, are generally injured, when the direction of the wound lies towards the seat of the liver, and a quantity of ferous and bilious fluid is discharged.

In wounds of the *Kidnies*, the urine is bloody, and much pain is felt between the groin and testicles; if the urine be discharged through the wound, the *Ureter* or the *Bladder* is injured.

In wounds of the *Uterus*, great pain is felt in the groins and hips, and blood flows from the pudendum.

Wounds in the *Abdominal Viscera* are generally attended with vomiting, hiccuping, syncope, diminution of sight, and cold sweats.

Wounds in the *Head*, which reach the pericranium only, are sometimes attended with violent symptoms; but when the skull is injured, great stupor generally ensues; and if the brain or its membranes be hurt, vomitings, stupor, loss of speech, paralysis, and convulsions, frequently succeed.

Contused wounds on the head, which have appeared to be slight, have sometimes been followed with fatal symptoms. Surgeons ought therefore to enquire minutely into the state of the parts injured, the nature of the blow or fall by which the wound was occasioned, and the state of the patient's senses

immediately after receiving it; in order that proper evacuations and regimen might be pursued, to prevent inflammatory symptoms, which have come on unexpectedly about the twelfth or fourteenth day from the accident, sometimes much later.

If upon passing the probe beyond the wounded integuments, a puffiness should be felt in the pericranium, that membrane is most probably detached; which is a presumptive proof that the blow was given with greater force than the external appearance of the wound indicates: and that the concussion which the brain must have suffered, ought to be duly attended to, particularly if the senses be rather disordered.

CAUSES. Instruments either blunt or sharp, which by violent application externally, are capable of producing a solution of continuity in the different parts of the body; they may also be occasioned by extraordinary distension.

CURE. Before the general method of cure is explained, it may not be amiss to mention the vague notions of the nature and treatment of wounds entertained by surgeons not many years ago; when the process of cure was supposed to be chiefly effected by art, and briefly to notice the opinions of those of the present day.

The progress of cure was then divided into four different states; the first was called the *crude state*, in which the discharge was thin and sanious; to correct which, greasy and warm dressings were applied towards bringing on the state of *digestion*, which was distinguished by an uniform, laudable pus, as it was called; when the wound appeared clear and red, the business of *incarnation* began, which was supposed to be carried on by means of narcotic medicines, or medicines that had the power of generating and promoting the growth of flesh; and at length, when the hollow of the sore was properly filled up, they proceeded to *cicatrization*.

More modern practitioners are convinced that nature is the principal agent in healing wounds; and physiologists have clearly demonstrated three different processes by which it is accomplished.

The first and most ready, is that which is commonly called healing by the first intention; this is frequently perfected, in a fresh-bleeding incised wound, without inflammation or suppuration, provided the parts divided have not been long kept asunder, or no constitutional disease interferes; by placing the edges of the wound as apposite and close together as possible, and retaining them so by slips of adhesive plaster, and, if requisite, the interrupted future.

The second process is brought about by what is termed adhesive inflammation, or rather adhesion, of the raw surfaces without inflammation, suppuration being the most probable consequence of the parts inflaming. If so much time has been lost that the mouths of the small vessels are collapsed or retracted, although the divided parts are in some degree inflamed, the wound may be healed by placing the edges properly together, and using the same means as directed in the first process.

The third and most dilatory natural process, is that by suppuration, granulation, &c. It is certain, however, that this tedious method might be often evaded, were the two former processes more regularly attended to.

Where, then, no extraneous body interrupts, no principal blood-vessel, nerve, or tendon is wounded, and the state of the divided parts will admit, the edges of the wound are to be placed as apposite and close as possible, and to be retained so, by slips of plaster, and the interrupted future, if necessary. Lint, moistened with traumatic balsam, or, in irritable habits, spread with yellow or white cerate, is to be applied over all, with a slight compress and retaining bandage.

If an arterial branch be divided, and be necessarily secured by means of the tenaculum and ligature, the ends of the latter are to be left a proper length without the edges of the wound.

The strips of plaster, and other dressings, will generally call for renewal on the fourth or fifth day, sooner or later according to the degree of adhesion, discharge, or cohesion of the parts; studiously avoiding the ill consequences of exposing the wounded parts to the air, which must attend too frequent or tedious dressing. Should inflammation come on rapidly, it will be necessary to remove the stitches, and repeatedly to apply cloths wetted with saturnine lotions, and to order gentle evacuants, and proper regimen. By such means, the cure of a common flesh-wound may be completed in one-fifth part of the time that it used to be, unless some constitutional ill should prevent.

The *Lacerated Wound*, when deep, angular, and large, or where a part is nearly torn off, requires the interrupted suture; but if there be much loss of substance, an extraneous substance unavoidably remains therein, or if the contusion be great, both suture and bandage should be omitted, and it must be treated like a wound of the complicated kind.

The *Complicated Wound* seldom admits of either suture or bandage. In this class it is also necessary to remove all foreign bodies, to stop the hæmorrhage, and, after having sponged the part well with warm water, to apply lint, dry, or armed with the balsam; still remembering that the milder dressings are best adapted to irritable habits, and that the wound should not be exposed too soon, or too often. Thick pledgits of soft lint, moistened with solutions of the gummy or balsamic kind, seem best to answer the intention in wounds of this order, as they will form a sticking crust, perfectly defensative against the air. A covering pledgit of fine tow, or doubled rag, spread with cerate, is preferable to sticking plaster,

which is too generally used upon such occasions, since the former can be removed without occasioning the least irritation. If the inflammation be great, the best external applications are, saturnine water, or bread-poultice.

When the constitution is in too languid a state, warm poultices spread thick with the bread and cummin, cataplasm, or strong beer grounds and flour of oatmeal poultice. The bark, decoction of snake-root, &c. should be copiously administered, rest and sleep indulged, and opiates with laxatives should be given occasionally.

If a *Nerve* or *Tendon* be divided in part only, the pain, inflammation and fever are much more violent than when a total division has taken place; it is therefore recommended to divide them wholly. The limb ought in all cases to be laid in a relaxed posture, and large thick poultices, made with bread and milk, or Goulard's mineral water, should be frequently applied. Membranous and tendinous expansions also, when wounded and on the stretch, are seldom to be relieved but by a greater division of the strictured parts. A *Locked Jaw* has been known to proceed from a slight wound on the finger, which amputation only gave relief to.

The remedies commonly confided in for the *Locked Jaw*, are, the warm bath, opium, in increased doses according to its effect internally, and applied externally to the contracted muscles of the jaw, softened down with spirit or water; also emollients freely rubbed into the parts covering the jaw; such as, neat's-foot oil, and animal fats of the softer kind. Some practitioners warmly recommend terebinthinate applications to the wound, in order to excite local inflammation, or a different action in the habit.

If an *Artery* be wounded, the hæmorrhage may generally be stopped by compression, tenaculum or needle and ligature; vide *Amputation*. When the vessel is inaccessible to either of these means, compresses

presses and bandage applied to the limbs in the course of the arteries, in order to retard the general circulation, have had good effect : in aid of which, the patient must be kept cool and quiet, and upon a low regimen ; but repeated hæmorrhages, and their evil consequences, are too often the result of such uncertain means. The actual cautery may be sometimes profitably employed, when other means cannot succeed ; particularly with the smaller arteries, when retracted. Dry lint, or dry compressed sponge, forcibly retained against a divided or ruptured arterial branch, has also proved effectual ; as has a hard pledgit, or button, armed with butter of antimony, or potential cautery ; but the chief security is ligature, towards which, an enlargement of the wound is sometimes necessary.

The sponge, and what is called the graduated compress, are sometimes necessarily confided in : namely, when the injured vessel lies deep, and cannot be come at by incision, without endangering some important nerve, or large artery ; or when the vessel is not in the power of the needle or tenaculum ; also to a bleeding surface. They are used after the following manner : a piece of dried compressed sponge, cut in size and shape suitable to the wound or incision, with thread tied to it, by which it is to be drawn away in proper time, is thrust down to the bottom of the wound, and fixed, with the end of the finger, on the bleeding mouth of the artery ; then compress after compress are fixed one above another, until the uppermost rises above the level of the wound ; a strict bandage, and pressure with the hand, complete the whole of this obligatory process.—*Vide Tumours in the Neck.*

Various instances can be proved, where wounds in the brachial and femoral artery, high up in their course, have been treated after the manner of aneurisms, with success. Amputation therefore, in cases of that kind, ought not to be implicitly put in practice.

tice. Suitable pressure, by compress and bandage, along the course of the main artery, so as to check the impetus of the circulation through the limb, and impede the efflux of the blood, has also succeeded in the brachial artery, when punctured in the operation of bleeding, and when it was accidentally divided about an inch below the elbow; but pressure and bandage at the part injured, is more likely to succeed. In all such cases, much council is necessary to the most skilful. *Vide Accidents from Bleeding.*

Contused Wounds are to be treated according to the degree of injury which the surrounding parts have received; and the edges should be brought together as near as possible. Traumatic balsam on lint, Sal ammoniac dissolved in oxycrate, or Goulard's saturnine water mixed up with crumb of bread, or applied with double linen cloth, are most proper to check or prevent inflammation. Such wounds, with great loss of substance, and where the part has received too much injury to be restored, will want suppurative means to be employed: in such cases, the aspect of the wound, and the nature of the constitution, ought to be well considered, and treated accordingly. *Vide Ulcers.*

Should the edges be pale, flat, or flabby, and the discharge prove thin and sanious, pledgits dipped in the decoction or tincture of bark, traumatic balsam, or tincture of myrrh with honey of roses, and invigorating poultices, should be exhibited externally, and the bark, &c. internally. *Vide Ulcers, and Gangrene.*

The Gangrene in lacerated or contused wounds, arise either from a diseased habit, the destruction of some considerable vessel, or excessive inflammation. If such wounds are attended with great inflammation, in young subjects and healthy constitutions, bleed topically or otherwise, use the antiphlogistic means, lay the part in the most relaxed and easy posture, and give opiates occasionally.

Wounds

Wounds in the Lymphatics will yield much limpid discharge, and are difficult to heal; if the salivary duct or glands are injured, it may be necessary to pass a seton, or make an opening into the mouth. Lint dipped into a solution of alum, camphorated vitriolic water, or Goulard, with proper compress and bandage, may be efficacious. Great trouble has been experienced from having wounded a lymphatic vessel, on opening the cephalic vein in the arm, which was chiefly remedied by hard compress and bandage. It is advised by some to take up the vessel with needle and ligature; but, when a large lymphatic vessel has been wounded and cured, the extremity of the limb becomes œdematous. This is very likely to happen after the extirpation of scirrhus glands in the armpit.

Wounds in the Ligaments. These parts are possessed of little sensibility in the sound state; when wounded or diseased, they become extremely irritable and painful, and are sooner or later productive of alarming symptoms. When the capsular ligament of a principal joint is wounded, inflammation, tumour, tension, and repeated suppurations, are the most favourable consequences. For the treatment of such wounds, see *Wounds in the Joints*.

Wounds in the Head, made by a sharp instrument, recent and simple, may be sewed up and dressed accordingly; which treatment will frequently succeed when the skull is cut, if no bad habit prevent. In wounds of the scalp, when the skull has been laid bare, cleansing the flap, and securing it by suture and a gentle retentive bandage, have proved effectual. In some constitutions, inflammation and erysipelatous swelling have followed, with fever, stupor, and other violent symptoms; which, after bleeding and cooling means had failed, were relieved by cutting out the stitches, waiting till the swelling subsided, and laying the scalp down again regularly. When the pericranium has been wounded by puncture, or a blunt

blunt instrument, the same symptoms have occurred, and have been relieved by an incision through the scalp, and the suppurating process.

Wounds in the Face are commonly cured with the assistance of the dry future, when deep and irregular, the interrupted future becomes necessary.

Wounds in the Eye-brows and Eye lids. When they are large and in a transverse direction with respect to the muscular fibres, it will be necessary to use the interrupted future; in a contrary direction, the dry future will be sufficient.

Wounds in the Eye. The eye admits of no future; the only means that can be employed on such occasions are bleeding and every kind of treatment to prevent inflammation, and to obviate suppuration, if possible, which last is sometimes the melancholy consequence. Vide *Ophthalmia* and *Cataract*. A wound through the orbit generally ends fatally.

Wounds of the Ear. If the cartilage be divided, or any part be irregularly torn, the common future is required, the balsam on lint, Goulard, compress, and bandage.

Wounds of the Tongue may be sewed up, and the stitches ought to be made deep, on account of the softness of the part. A solution of myrrh in barley water, with the addition of honey of roses, is a proper lotion, and should be used frequently.

Wounds of the Neck are more or less dangerous, according to the nature of the parts that are wounded. If the carotid artery, or internal jugular is injured, the surgeon's art is of little or no effect. When the windpipe is wounded transversely, the interrupted future is to be preferred; if longitudinally, adhesive plasters will suit best. The interrupted future, with broad ligature, has been known to answer very well, by passing the needle through the muscle and cellular membrane, close to the trachea, without piercing it, or including the ring, and applying sticking plaster over the whole. The
external

external applications should be of the mildest kind, and the head should be kept several days in a fixed posture, by means of bandage, and as much inclining to the chest as possible. In stitching up the divided parts, the needle, for safety sake, should be passed from within outwards; and in all cases wherein the danger of wounding the vessels is great, it ought to be of the flat kind, and moderately curved; the readiest way of doing this, is to fix a needle at each end of the ligature.

Wounds in the Œsophagus generally end fatally, as do those in which the par vagum and nerves which supply the internal parts are divided. They are ordered to be treated in the same manner with those of the trachea, but the attempt is more dangerous on account of the difficulty of getting at the part, for fear of injuring the nerves and blood vessels. The diet in such cases should be liquid, such as thin milk, sago, tapiaco, jellies, &c. but nutriment should chiefly be administered by glyster.

Wounds in the Thorax. In those that penetrate this part, an enlargement is sometimes necessary to facilitate the discharge from within the cavity. When the intercostal artery is wounded, it may be secured with the curved needle. Bleeding repeatedly, rest, and a cool regimen, with gentle laxatives and refrigerants, have proved successful where the lungs have been wounded through and through; the principal business then is, to restrain hæmorrhage, and to prevent inflammation, by the general means. In most wounds, superficial dressings are to be preferred; but if there be a discharge from the cavity, it will be necessary to keep open the external wound, after the manner before prescribed. *Vide Empyema.*

To give exit to the extravasated blood, perforation at the inferior part of the thorax is advised; sometimes passing the finger or a silver canula up the wound, will invite the blood to the orifice, and
relieve

relieve the oppressive symptoms; but the cautious and judicious surgeon would surely leave such hazardous business to the indications of nature, and attempt to give aid only where she points out the necessity for it. Concerning this process, *vide Paracentesis*.

Wounds in the Abdomen. Those which penetrate the cavity without injury to the intestines, or other viscera, depend principally upon bleeding, rest, and cooling remedies; if regular, may be united by the dry suture, but when irregular, are to be assisted with the interrupted or quilled suture; a recumbent posture, and a supporting bandage, are always necessary, and the quilled suture is to be preferred in wounds of great extent. *Vide Cesarean Section*.

When the *Intestines* protrude, and are not wounded, they should be returned into the cavity as soon as possible; and in case the orifice is not sufficiently open, for that purpose it must be enlarged; on such occasions, the bowels are generally puffed up with rarefied air, which some authors advise to be let out by slightly pricking them; but such an expedient ought not to be trifled with.

When the *Intestines* are wounded in such degree as to require the suture, the glover's stitch is ordered to be used. *Vide Sutures*.

When the gut is entirely divided, and both ends are to be found, the rim of the one should be slipped, if possible, a little way into the other, or at least placed in contact with it, and retained so by a common stitch or two, at the same time it will be proper to pass the threads through the inner edge of the external wound, for the purpose of confining the injured parts of the gut there, and the better chance of adhesion.

If any part of the *Omentum* appears to be gangrenous, it will be proper to separate it just below the sound part, and return the rest. *Vide Herniæ*.
And

And if a portion of the intestines be detached, either by incision, or by mortification, the sound part should be stitched to the edges of the wound, and be left to form an artificial anus.

Wounds of the Receptacle of the Chyle, Thoracic Duct, Pancreas, Mesentery, Liver, Spleen, Kidneys, &c. are to be treated in the general method prescribed against *Inflammation, &c.* Vulnerary injections and tents were formerly in great use; the first are pretty much exploded; the latter are still in use, when matter is formed in either of the great cavities.

Wounds in the Joints, are subject to violent pain and inflammation, and sometimes attended with delirium and convulsions. When the capsular ligament is pierced through, the *synovia*, a slippery fluid secreted within the joint, serving to facilitate its motion, will pass off. Surgeons are sometimes deceived as to this discharge, by a fluid of a similar nature proceeding from the *sacculi mucosi*, which are small bags that lie under and serve to lubricate the tendons of the muscles in their action. The chief marks of distinction in the two cases are, the symptoms being more violent and dangerous in the former, and the synovial discharge more copious.

In all such wounds, plentiful bleeding, laxatives, repeated doses of opium, nitre, and cooling regimen, are the principal means of relief. Externally, and at first, saturnine applications; afterwards as in other abscesses. As soon as the inflammatory symptoms are removed, compresses moistened with aluminous or vitriolic solutions, astringent decoctions, &c. with moderate bandage, together with bark and vitriol, will be necessary towards restraining the discharge.

Gunshot Wounds. The violent contusion, laceration of the parts, and the lodgment of extraneous bodies, render these wounds more alarming than most others. Those which affect the bones, joints, viscera, or blood-vessels, are of the worst kind; still there

there have been instances of cure in the most desperate cases; too few, however, to warrant the trial in bad habits.

Cure of Gunshot Wounds. The universal tremor, and the fluttering of the heart, together with coldness in the extremities, which almost immediately succeed the stroke from wounds of this kind, is a strong affection of the nervous system; which generally produces a degree of terror, in men of the greatest courage and resolution.

The first things to be attempted towards the cure of these wounds are, to extract all foreign bodies, and to secure the blood-vessels; for which purpose, it will be sometimes necessary to enlarge the opening, if to be done with safety; and where probing is necessary, the finger should be preferred. If the extraneous body cannot be removed with safety, by cutting upon it, the work must be left to nature, and the wound must be dressed superficially; for when a ball, or any other foreign body, is sunk deep, and lies out of the reach of the finger, the use of long forceps is dangerous, and seldom effective. Numberless instances have occurred, wherein bullets have lodged many years, in various parts of the body; some of which have at length made their way towards the teguments, and been easily extracted.

Scarifications are generally necessary: they serve to release the strictured circle of the wound; larger and deeper incisions must be made, to get at a bleeding artery, to remove splintered bones or foreign bodies lying at the bottom of the wound, and to prevent or relieve painful stricture and inflammation in the course of the fascia.

If the wound hath not bled much, bleeding will be advisable, and in plethoric habits should be repeated accordingly, particularly in wounds of the chest. For the first fortnight, it will be necessary to keep the patient on a cool regimen; and a stool should

should be procured every day, by glyster, or by some gentle aperient.

The most useful applications are, light, easy dressings, saturnine lotions or poultices; but these wounds being of the nature of contused wounds, the suppurative process is to be expected; in which state, the bread and milk poultice is most applicable. Spirituous applications do not answer on these occasions. If the fore should prove gangrenous, or the habit be impoverished, act accordingly.

Gunshot wounds seldom bleed much, unless a large vessel be injured; the ball forming an eschar which generally separates in a few days, and is followed by a copious discharge; it is necessary therefore to wait patiently for the separation of the eschar, particularly if it borders upon any material blood-vessel.

The tourniquet is always a necessary appendage, and should be ready to a single turn *on the limb*, when the wound is in the course of a large artery, and attended with a throbbing pulse.

Should the patient complain of much fulness and throbbing in the wound, a sudden gush of blood may follow, which has sometimes been attended with fatal consequences, especially if preceded by a continued discharge of sanious and ichorous matter: in such a case, timely bleedings, and the bark, are proper remedies.

Opium in this, as in all other painful complaints, proves an useful remedy. In cachectic and scorbutic habits, if the discharge be glairy or gleety, or the wound has a pale and flabby aspect, no medicine is preferable to that and the bark in red wine. Lime-water, with a slight addition of milk, is useful in the latter stage. When these wounds are desperate in their nature and situation, particularly where some important joint is shattered and torn, also in fractures complicated with the division of a large artery, amputation is seldom or never to be delayed; yet

under such circumstances, limbs have been unexpectedly saved.

Venomous Wounds. The most formidable wound of the kind which we have to guard against the effect of in this climate, is the bite of *mad animals*; *dogs* particularly, as happening most frequently; its description and symptoms are as follow:—No sudden effect on the constitution is observed from the bite of a mad dog; and the wound itself is not more difficult to heal than lacerated wounds in general, of the same magnitude. The patient has also no particular affection, except dejection of spirits from a dread of its consequences, till about a month or six weeks after the accident; sooner or later, according to the circumstances; when redness, heat, and tension *sometimes* attend the edges of the wound, and wandering pains and spasms diverge from the part, accompanied with nausea, difficult respiration, anxiety about the præcordia, vertigo, and loss of strength; great depression of spirits, and the love of solitude ensue; sleep is disturbed with twitchings, horrid dreams, and restlessness; and the pulse is all this time, quick, weak, and irregular.

On the first or second day, the symptoms gradually increasing, comes on a peculiar affection of the throat, which, upon every attempt to drink, occasions a sense of suffocation, and a spasmodic contraction of the organs of respiration; which symptoms, even the common air in inspiration will produce, particularly if the weather be moist. This anxiety, and not being able to drink without the greatest difficulty, have given the disease the appellation of Hydrophobia.

Whilst the general symptoms are increasing, the saliva comes off in a viscid and frothy state, with powerful and repeated efforts to relieve the throat from the irritation it occasions, attended with a singular kind of noise, little different from common hawking, which persons prepossessed with the vulgar notion,

notion, conclude to be similar to the barking of a dog: the light, at this stage of the disorder, begins to grow intolerable, and the urine flows involuntarily.

At this awful period, come forward heat and flushing, with a strangulated appearance in the face and neck, together with a quicker pulse, with some weaker, with others stronger; also, a tentigo penis, and an involuntary emission of semen. Convulsive spasms affect most parts of the body. Some are seized with a fierce delirium, or outrageous madness; others shew a fixed melancholy, with a most pitiable countenance, having a perfect sense of their miserable state: at length the lower limbs become paralytic, convulsions increase, the pulse grows languid, cold sweats ensue, and death soon puts an end to the general distress, which commonly happens on the third or fourth day from the attack. Such was nearly the melancholy progression of symptoms with a poor husbandman, who, within an hour of his death, called for several of his acquaintance, and took his last farewell of them, by shaking hands with each; at the same moment telling them, that they need not be afraid of him, for he would not hurt them.

This poor distressed object had been deprived of the use of his lower limbs for some hours, which in his restless state he dragged after him round the room, hawking up and scattering about the saliva, and expressing as much horror at the name of a bed, as this miserable class of patients do at the sight of water; both which equally influenced his mind with the dread of suffocation. Whilst he was performing the foregoing act of friendship with his fellow servants, his mind being particularly agitated, a general convulsion seized him, and curled him up in a heap, which was succeeded by as sudden an extension, and that closed the melancholy scene.

The Bite of a Viper is also attended with violent symptoms, and is in this country next in force to the

preceding. A pungent pain seizes the part, inflammation comes on, the redness gradually changes to a bruise-like appearance, that sometimes diffuses itself more generally; retchings, bilious vomitings, a fixed pain about the præcordia, weak pulse, languor, deliquium, cold sweats, and even death itself, have been the consequences, in very weak and irritable constitutions.

The Bite of the Rattle-Snake is much more formidable than that of the viper, and sooner pervades the system.

The most particular wound of the venomous kind, if it may be called so with any degree of propriety, is that produced by the Guinea-Worm. These creatures are hatched from ova, that float in the rivers and waters in hot climates, but principally upon the coast of Guinea, and in the West Indies. It has a blackish head, is of a tape-like appearance, and sometimes grows to above a foot in length. It generally fixes itself in the leg or thigh, and is preceded in its appearance by an irksome boil. The head of this involutioned animal is visible in a day or two after the fore has burst; and the ulcer can never be healed, till the whole of the worm is extracted: the method of doing which, as practised by the negroes, and in the hospitals, is as singular as the production. They fix the head of the worm to a small round bit of wood, lead, twisted silk, or quill, and every day roll as much of the worm upon it as may be done without breaking; until the whole is extracted; then heal as in common.

The stings of hornets, wasps, bees, &c. often give great pain, but do not immediately affect the constitution, except in very irritable habits. Two remarkable instances are known to have occurred in Norfolk, from the sting of a bee. A man, to all appearance healthy and well, was stung by a bee in the hand, and survived the accident not many seconds. He said to his companion, who was walking up
a lane

a lane with him, "I am stung by a bee," became faint, and, reclining on the bank of the hedge-row, expired. Some time after, the son of this man was stung by an insect of like kind; which accident was attended with an alarming degree of fever and inflammation for several days.

Causes. *Hydrophobia*, or canine madness, is occasioned by a virus *sui generis*, which being introduced through a wound made by the bite of a *mad animal*, gradually diffuses its effect throughout the nervous system. The poison from the bite of a *Viper* is probably absorbed; but a late ingenious writer on that subject has asserted the contrary. The stings of hornets, wasps, bees, &c. have a local effect in general.

Cure. The cure for the bite of a *mad Dog*, or any other quadruped that breeds madness, or has a power of communicating it, may be divided into two parts—the preventative, and the curative; the former of which, if taken in due time, is most likely to succeed.

Cauterization, cupping the part, or blowing it up with gunpowder, and washing it well with salt and water, soon after the accident, are said to be efficacious, by preventing absorption from taking place. Sucking the wound, and immediately after applying a blister, is also recommended for that purpose. But timely excision of every part bitten, or that was open to the virus is the only sure preventative. After each of the former processes, it is recommended to rub into the legs or thighs daily, half a dram or a dram of the strong mercurial ointment, or so much as will raise a slight salivation, and to dress the wound with the following stimulating ointment, to excite and keep up a necessary discharge. When the nature or situation of the wounded part prohibits the full use of the knife, the following remedy is strongly recommended.

Undoubted proofs have been given of the good effects of *ablution* with water, with or without a

moderate portion of common salt, or alkali; which latter is said to have an attractive quality towards mucus or saliva. This process is to be industriously pursued, first with warm, then with cold water, for three or four hours together. If the teeth have passed deep into the flesh, and the opening of the wound be too much confined, it will be necessary to use the knife, and to expose every part of it to view, if possible. In such wounds, or those that are much torn; a long continued stream of warm water from a tea-pot or kettle, held some height above the part, is a mode most to be confided in.

Ablution, attentively and assiduously pursued, will insure success, where excision would be unwarrantable. Caustery and caustic should never be depended upon.

The great professor, in his first lines, gives it as his opinion, "that the efficacy of mercury, given very largely, and persisted in for a long time, both as a means of preventing, and of curing the disease when actually come on, is better vouched by experience, than that of any other medicine hitherto proposed, or commonly applied."

The Ormskirk, Calthorpe, and Oriental medicines, have lost their former reputation; and even Dr. Mead's infallible medicine is totally disregarded. Extirpation, ablution, and the mercurial course, have justly taken place of those uncertain remedies.

No curative method is yet laid down as absolutely effectual in this disease after the symptoms have come on. Great authority gives mercury the reputation of curing at that period. Some have prescribed repeated bleedings, according to the strength of the pulse, and the violence of the symptoms. Bleeding, the warm bath, and opium in large doses, have been united without success. Repeated doses of ether, and blisters to the head and throat, have been suggested; but the more probable means are, frequent doses of opium, from one to three or more grains, every three

or four hours, until it has produced some sensible effect*, and rubbing a sufficient quantity of mercurial ointment into the arms, legs, or thighs, or of calomel into the gums, to excite a spitting, which ought to be continued.

The author, conceiving the virus to have a singular, but late effect, by excitement on the nervous system only, recommends extirpation and ablution, even up to the previous symptom of pain in the bitten part, or the hydrophobic symptom.

A complete cure, even in the hydrophobic state, has been performed, by forcibly exhibiting small portions of sweet oil, and frequently rubbing in the same over the surface of the body. For this very remarkable case, vide London Medical Memoirs, Vol. III.

Quere, whether relief might not be received from extirpation at a later stage of the complaint.

The remedies recommended against *bite of a Viper*, are, sweet oil, and viper's fat: those who make it their business to catch those reptiles, look upon these simples as effectual defensatives against the severest bite. Irritable and bilious habits suffer most from this kind of wound; and on such occasions, an emetic, and an oily purge, should be taken at first: sometimes bleeding and poulticing are necessary. Camphor and opium, with ipecacuanha, are considered as excellent remedies. In this venomous wound, it has been recommended to cut out the injured part, as a preventative of the usual symptoms.

The bite of the Rattle-Snake is exceedingly destructive: it is almost immediately attended with purple spots, and difficult respiration. Some bleed at first, and give alexipharmics, particularly a decoction of the rattle-snake-root, and apply that root

* An epithem made with opium, softened down with tinct, opii, and applied externally to the throat,

mashed, or fresh tobacco leaves, repeatedly to the wound. The following is the grand Indian recipe :

“ Give a large spoonful of the expressed juice of the leaves or roots of horehound and plantain, which, if the patient be much swelled, must be forced down the throat ; if the first spoonful should not suffice, give another soon after.”

They also apply tobacco-leaf, steeped in rum, repeatedly to the wound. In such cases, excision would probably be most effective.

To the bites and stings of hornets, wasps, &c. apply vinegar and oil, spirit of hartshorn, laudanum, honey and milk, Goulard or bread poultice, and the like, according to the severity of the symptoms.

PRACTICAL SURGERY.

PART THE SECOND.

SUTURES.


RECENT wounds, that are free from extraneous bodies, loss of substance, and much inflammation, that are not much contused or lacerated, and whose lips can be brought into some degree of apposition, also that happen to parts that are subject to contract, may be greatly assisted by Suture; of which there are five different kinds.

The Dry Suture. A plaster made of the simple litharge plaster six parts, and one of yellow resin, is thinly spread on a close rag, which is cut into slips of proper length, and in a shape adapted to the nature and form of the part; these slips or strips are to be fixed across the wound at moderate distances from each other, in immediate contact with that, and the skin on each side of it, so as to retain the edges of the wound as close together, and as apposite as possible. The uniting bandage is a great assistant to this suture. The dry suture is most useful in superficial and longitudinal wounds, to avoid deformity, or to heal, by what is called, the first intention.

The Interrupted Suture is performed as follows:— Having cleansed the wound of dirt and grumous blood, its lips are to be brought as close and apposite as possible; the needle, armed with a waxed ligature of proper size, is generally passed about two-fifths of an inch from each edge, and tied with a double

double knot. The ligature is sometimes made with a single knot, over which a small round linen compress is applied, which is fastened round with a second single knot and a slip-knot; to the end that the stitches may be conveniently loosened, if required. This mode was much practised some time since; but, in common wounds, the precaution is considered as scarce ever necessary. When the lips are united, the threads should be drawn out. The number of stitches must be proportioned to the extent of the wound, and its angular points, their depth, and to the degree of retraction in the divided parts. The dry suture in the interval spaces, and a gentle supporting bandage, are great helps to this kind of suture. The best and safest mode of passing the needle on most occasions, particularly when the wound is in the neighbourhood of a nerve, tendon, or blood-vessel, is to fix a flat needle at each end of the ligature, and pass them at opposite sides, from within outward.

The interrupted suture is commonly used in wounds that are deep, large, and angular; and sometimes, to keep forwards the integuments after an operation; which intention may mostly be better effected by proper compress and bandage; since in such a case great inflammation frequently follows; for even in common wounds, more particularly when they happen to gross habits, inflammation will sometimes proceed to so great a degree, as to require the stitches to be withdrawn.

The Twisted Suture is performed, by bringing the lips of the wound in a fresh bleeding state exactly together, and thrusting one or more pins, according to its size, through the middle of both edges; then twisting a piece of waxed thread several times across the middle, and round the ends of the pins in the following form . The best pins for this purpose are made of silver or gold; the former must be tipped with steel points, the latter may be made to do without: when passed through, the points may
be

be snipped off, observing afterwards to place a small piece of fine rag or lint under each end of the pins, to prevent them injuring the subjacent parts.

This suture is principally used after the operation for the hare-lip: it has been advantageously used in uniting the edges of the urethra, as may be seen in Mr. Warner's Cases in Surgery.

The Glover's Suture is made with a fine strait needle, armed with small thread or silk: it has been principally employed in wounds of the intestines, by passing the thread through the lips of wounds of the gut, in the manner that a glove is usually sewed; observing to make the stitches about one tenth of an inch distant from each other, and to leave thread enough at each end, to hang out some length from the external wound; which threads were passed with the strait needle, through the internal and lower edges of the wound in the belly: by which means the intestine was brought into contact with the peritonæum, or inner surface of the abdomen, and made to adhere thereto. This thread was generally withdrawn in a week or ten days, or as soon as it could be done without force.

This suture may have been useful in such wounds of the intestines, as are sufficiently large to require it: but a slighter degree of confinement is said to answer every necessary purpose, as mentioned under Wounds of the Intestines, without the parade of the glove-stitch, and a troublesome puccuring or interrupting process; and that a simple stitch or two may be mostly sufficient, whether the gut be divided through or not.—Vide Mr. *John Bell's* ingenious Discourses on Wounds; in which the strictures on the errors of former practitioners, as well as some of modern date, are extremely just and instructive, but delivered in a language rather too sportive and sarcastical.

The Quilled Suture was much in use with the ancients, and is better adapted to large gaping wounds
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than the interrupted: to perform which, a large crooked needle, with a strong double ligature well waxed and looped at the end, is to be passed through each side of the wound, at about an inch from its edges; fixing a roll of plaster, spread on rag or silk, through the bow of the ligature on one side, and another roll of the same size on the other, between the ends of the ligature, which are to be tied over the latter with a single and slip-knot. When the wound is so long as to require three ligatures, the roll or quill should be of sufficient length to pass each loop or bow, and the middle ligature should be tied first.

This suture in large wounds is preferable to the interrupted, being less apt to tear out. It was used not many years ago in closing the abdomen, after the Cæsarean operation; wherein the incision was full six inches in length, which was sewed up with four stitches at equal distances, and an inch and a half from each edge.

DIVIDED AND RUPTURED TENDON.

The practice of uniting large tendons completely divided, by forcing the retracted ends into contact, and retaining them so by suture, is justly exploded. Some former practitioners went so far, as even to lay bare the extremities of a ruptured tendo achillis for that purpose: but later practice has proved, by various instances, that there is no necessity for forcibly bringing the extremities of the tendon together in either case, whether wounded or ruptured, since adhesion to the adjacent parts, and the exudation of a connecting medium, will supply every defect of that kind: besides, it is well known that cures have been effectually accomplished, where the extremities of the retracted tendon could never be brought within an inch of each other. The chief thing to be done, therefore, is to counteract the retractive

power of the muscles, by a flexed or extended position of the limb, according to the state of the injured part; and to retain the muscles in that situation, and prevent their action by means of a thin flannel bandage. The wound is to be treated in the common way.

It sometimes happens, either from great irritability of the nervous system, or a peculiar unintelligible state of the constitution, that a puncture or partial division of a tendon or nerve, will produce violent pain, inflammation, convulsions, and even death. In cases of this kind, previous to the extreme symptoms, or provided the severe pain has not been relieved, by opium given, in large doses, it has been found absolutely necessary to divide the injured part completely, although at the hazard of its sensibility and use. At other times, and in different habits, such accidents have produced little or no trouble.

The Ruptured Tendo Achillis. The chief thing necessary in this case is, to extend the foot, and suspend the heel; which may be effected by means of a slipper made of double quilted ticking, and a strap of leather or ribband reaching from the heel to a circular piece or garter above the calf of the leg. In every case of ruptured tendon, care should be taken not to put the injured part upon the stretch before union is perfectly consolidated.

For this improved knowledge and treatment we are indebted to two principal anatomists of this century, Dr. Monro of Edinburgh, and Mr. John Hunter, who both personally experienced its use and convenience.

ANEURISM.

DESCRIPTION. This is a soft, and commonly a throbbing tumour of blood, formed either by the dilatation or division of an artery. It may be divided

vided into four different classes; the True, Mixed, Spurious, and Varicose.

The True Aneurism is a circumscribed tumour, arising from a weakness of the coats of the artery. This swelling is at first small and confined, attended with pulsation, and disappearing upon pressure: it afterwards gradually increases, the skin retaining its natural colour and appearance. After a time, the blood cannot be compressed, the pulsation grows weaker, or is not to be felt, the skin begins to turn pale, is soft and œdematous, afterwards grows livid and gangrenous, or cracks, whence oozes a serous matter, and blood in a short time bursts forth. Should the diseased vessel be large, and the effusion great, death is most likely to be the immediate consequence.

The increase and pulsation in the aneurismal tumours of the larger vessels, which are chiefly subject to this species of disease, have been known to affect the adjacent bones so much, as even to displace, elevate, and dissolve them.

The Mixed Aneurism may be produced, by injury done to the external coat of the artery, so as to occasion partial weakness, and a protrusion of the internal coat. This kind also begins with a small circumscribed pulsating tumour, which gradually increases, disappears upon pressure, and in process of time is attended with the symptoms of the former.

The Spurious or False Aneurism is produced by a wound or puncture penetrating through both the coats. It begins with a very small tumour, which is soft, and pulsates strongly; it has sometimes continued pretty nearly of the same size, for days, months, and years; then gradually increasing, diffuses and extends itself within the cellular membrane, according to the firmness or laxity of the contingent parts. At other times the blood spreads itself greatly, and brings on a considerable tightness in the limb in a few hours; and a part of the extravasated blood passing
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superficially, occasions great discolouration of the skin.

The diffused contents which are deep seated soon coagulate, and acquire great firmness; and the pulsation lessens in proportion, till it is entirely lost. The tumour increasing, the limb becomes more afflicted with pain, stiffness, and deficiency of motion; and provided the operation is postponed or neglected too long, carries off the contiguous bone, and gangrene will follow.

The Varicose Aneurism was first discriminated by the late great anatomist, Dr. William Hunter, who at the time of his discovery expressed a doubt whether it ought to be called Aneurism or Varix, or both, or neither; but afterwards gave it the denomination of Varicose Aneurism. It may be considered as a species of spurious aneurism, since it originates from a wound made through the vein into the adjacent artery. It differs from the spurious aneurism in the following particulars: the vein lying in contact with the artery, the orifices of each are so exactly opposite at the under part of the vein, as to remain open to each other when the teguments and upper orifice of the vein are healed up; by which means the blood is found to pass immediately from the opening of the artery into that of the vein, with a pulsatile jarring force, and a strange hissing noise, like what is made by continuing the sound of the letter R in a whisper, as the Doctor has described it. This tremulous motion stops and returns by making and ceasing compression, and is even visible in thin habits. The blood transfused is generally in motion, consequently in its fluid state; the vein is much enlarged at and about the opening, but is found to return to its natural size, at a small distance above and below the elbow. The artery is smaller than natural in the wrist, but larger in the arm. In one instance, the Doctor had observed, that when the arm was held up, the vein totally subsided; in another,

another, a kind of pouch was to be felt near to the punctured part : if this bag be large and irregular in its form, and the cellular membrane be more yielding at one place than at another, or if the fascia of the muscle be unequally tight, a sort of canal may be formed between the two vessels, and coagulation may be produced, as in the common spurious aneurism.

This enumeration of symptoms, if properly attended to, will be sufficient to distinguish it from any other tumour. For a more enlarged account of this complaint and its discovery, vide Med. Observ. vol. 2, p. 390.

Aneurisms have been mistaken for collections of matter ; Mr. Warner ingenuously mentions in his cases an instance of this kind ; wherein the whole of the thigh was greatly tumefied, the patient was hectic and much emaciated, and not the least pulsation could be felt. The injury was occasioned by falling off a man's back, about four months before the opening was made, and the knee and parts adjacent were principally affected.

Strong pulsation is generally to be felt at the beginning of aneurisms, whence the nature of the disease is at that time easily to be ascertained ; but when the tumour is large, and the coagulum is so firm as to render pulsation imperceptible, the only means of proving the matter will be, by strict enquiry into the rise and progress of the complaint, and an examination whether the most prominent part lies in the course of a large artery. Pulsation, and disappearance of the tumour on compression, are the true characteristics of an incipient aneurism ; but are seldom to be perceived, or produced, in the firm state of its contents. The distinction at that time being so uncertain, such swellings had better not be meddled with when situated so as not to admit of applying the tourniquet.

Sometimes abscesses which lie near a principal artery

artery will partake so much of the pulsation, as to render the distinction difficult; which was the case with the lad who had his breast-bone fractured, as mentioned by the same accurate observer here quoted; where the broken bones were forced asunder, and the intermediate space was occupied by a considerable tumour, which receded upon pressure, and resumed its former size after the compression was removed: it had a strong pulsation, and the integuments bore their natural colour. The situation of the swelling and symptoms were sufficient reasons for letting it take its course; it burst in a few weeks, discharged a large quantity of matter, and did well with superficial dressings.

CAUSES. The *True Aneurism* arises from a diseased or weakened state of the coats of the artery, which may be produced by violent exertion or a debilitated habit. The *Mixed or Spurious* may proceed from contiguous sores, the splinters of a fractured bone, blows or wounds with sharp instruments, punctures with lancet, &c. The *Varicose Aneurism* is caused by wounding the artery through the vein where the vessels are in close contact with each other.

CURE. In the early stage of the *True Aneurism*, the most proper treatment is, to compress the tumour in moderate degree, so as gently to support the weak part, and resist the propelling force, and to keep the body in a temperate state. Occasional bleeding and gentle laxatives are also necessary; violent exertion, or every emotion that will tend to increase the momentum, must be avoided. Opiates are the best palliatives in the latter stage; the operation in such cases has but too short an effect.

The *Mixed Aneurism*, if it arise from a partial weakness or injury, may be relieved by the foregoing means; otherwise the operation should be called to its aid; particularly in such parts as will admit of the use of the tourniquet, or the necessary check being given to the circulation through them.

The Spurious or False Aneurism. For reasons given under the article Accidents from Bleeding, it appears to be wrong to make great pressure upon this tumour; since the return of the blood through the vein must be impeded by it, and the effusion of the artery is likely to be increased; instead of which it has been recommended to let the blood flow through the orifice in large quantity, or to lessen the impetus by opening some other vein, to enjoin rest, to keep the body cool and lax, and observe a spare diet; to close the external orifice with slips of plaster, and use no bandage. Others use compresses in the course of the artery above and below the orifice, and immediately upon the injured part, with a tight spiral bandage. Some few instances may have done well by either of these methods of cure, but this species mostly requires the operation.

The Varicose Aneurism. Moderate pressure may be serviceable in this complaint, as a support to the coats of the vein; but instances are well authenticated, proving that they have continued for many years without any attempt to relieve, in nearly the same state as at first. The discovery of this distinct kind of aneurism, as it is called, is of great importance, since it will prevent an unnecessary attempt towards a cure, by means of a dangerous, though, on other occasions, a necessary operation.

The operation for the aneurism may be performed after the following manner: The tourniquet and ligature being fixed upon the superior part of the limb, and the circulation fully suppressed, suppose in the humeral artery, the arm should be placed on a table, in such a position as will best expose the whole of the tumour to view; an incision is then to be made with the scalpel, from the upper extremity of the swelling to its most inferior part, in the course of the artery, through the skin and cellular membrane, so as to expose the coagulated body, which
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will appear in form of a membranous substance ; an opening is then made with the lancet into the middle of the tumour, large enough to admit the end of the left fore-finger, upon which the blunt-pointed bistoury is to be passed both upwards and downwards, to the full extent of the cavity. The coagulated blood being removed with the fingers, and the whole sponged clean, the tourniquet may be slackened a little, the more readily to discover the injured part of the artery. It is a matter of dispute between some men of eminence, whether the coagulum should be discharged or not ; both methods have succeeded. Vide the last of this article. A crooked needle, sharp at its sides only, and armed with a broad flat waxed ligature, is to be passed round the artery, just above the orifice, in the first instance, and another at the same distance below it ; which ligatures are to be tied tight, passing them, as is usual, twice through the first noose, and then making the single knot over it, and leaving the ends a sufficient length beyond the edges of the wound.

The tourniquet may then be loosened ; and, if no blood be discharged from the artery, the whole is to be dressed with lint, a pledgit of white cerate, a soft linen compress, and slight retentive bandage. The patient should be immediately removed to bed, the limb placed upon a pillow, in the most easy posture ; and an opiate must be occasionally given.

In making the ligature round the vessel, it will be proper to avoid taking in the nerve, which may be readily done by bending the arm a little, and raising the artery, either with the probe introduced into its orifice, or with the hook, or by pinching it up with the finger and thumb. The needle should have no edge at its convex part ; and it is adviseable to use one with a blunt end ; an eye-probe bent will answer the purpose equally well. It will be prudent to have the amputating instruments in readiness, for

fear securing the vessel should be impracticable. The limb is commonly for a few hours without pulsation, and for some time affected with numbness, and a sense of cold.

The patient's diet should be managed agreeably to the nature and strength of the constitution, and particular symptoms: the wound is also to be treated accordingly.

A new and ingenious method of curing the false aneurism from bleeding, without rendering the artery impervious, was suggested and practised with success, by Mr. Lambert of Newcastle, in the year 1759, as appears by a paper published in *Med. Obs. and Enq.* vol. 2. This was effected by passing a small steel pin, rather more than a quarter of an inch in length, through the lips of the wound in the artery, which was secured by twisting a thread round it, as for the hare-lip; by which means the vessel was perfectly closed, and healed up. Previous to passing the pin, the incision was made according to usual extent, in order to lay the artery sufficiently bare; and two ligatures were provisionally passed under the vessel, one above, and the other below the orifice.

It was first dressed on the fourth day from the operation, when the whole had a good appearance: the pin came away on the fourteenth day, and every part was healed on the twenty-second day, except where the ligatures remained, but which were never tied; on the last-mentioned day they were removed, and the wound was perfectly healed in a few days after. The pulse was very little weaker than usual.

There are but few opportunities for performing an operation of this kind in the manner described by Mr. Lambert, and as few surgeons who would venture upon it in private practice, without further proofs of its good effects; it is for these reasons perhaps that we have not heard of a second trial.

Rational

Rational conjectures are formed against it being frequently performed; still should it be again attended with success, there might be reason to believe, that it would be a valuable as well as an ingenious mode of operating in similar cases.

It has been observed by Mr. Sharp, that aneurisms from bleeding commonly happen above the division of the humoral artery; and that to render the vessel impervious, appears a desperate remedy, and likely to produce mortification; but we know that although for some time after the operation, the degree of pulse is scarcely distinguishable, success has attended the operation, in aneurisms both of the main trunk of the humoral and the femoral arteries; more particularly in the popliteal aneurism, where the femoral artery has been tied up high in the thigh just below the branching off of the arteria profunda, by which and its inosculations the circulation has been restored. In this operation the tumour of blood has been left to itself, and gone down gradually without being opened and discharged.

Mr. John Bell of Edinburgh, in his Discourses before quoted, has given a most extraordinary case of an aneurism in the posterior iliac artery, which sheweth the possibility of operating with success, above the branching off of the profunda. This case is of so new and interesting a nature, and gives so strong an instance of the operator's skill and resolution, that a faithful recital of it in Mr. Bell's own words can need no apology.

“ A poor man, who was by trade a leech-catcher,
 “ fell as he was stepping out of a boat; and the
 “ long and pointed scissars which are used in his
 “ business, being in his pocket, pierced his hip
 “ exactly over the sciatic notch, where the great
 “ iliac artery comes out from the pelvis. The
 “ artery was struck with the point of the scissars;
 “ it bled furiously; the patient fainted; and in so

“ narrow and deep a wound, the surgeon, when he
“ came, found little difficulty in stopping it up,
“ and less difficulty still in making it heal. The
“ outward wound was cured; the great tumor soon
“ formed; and the man travelled up from the
“ north country, where the accident had befallen
“ him, and in six weeks after arrived in our hospital
“ here, with a prodigious tumour of his hip, his
“ thigh rigidly contracted, the ham bended, the
“ whole leg shrunk, and cold also and useless, as if
“ it had been an aneurism rather of the artery on
“ the fore-part of the thigh.

“ The tumour was of a prodigious size, and by
“ that very circumstance of its being one of the
“ greatest aneurisms, it lost all the characteristics of
“ aneurism; especially there was no pulsation, no
“ retrocession of the blood when the tumor was
“ pressed upon; there was nothing peculiar except
“ this, that the great and sudden distension was
“ the cause of great pain; and from the continual
“ pain, lameness, and hopes of a cure, he was
“ ready to submit to any thing, beseeching us to
“ operate.

“ There was little doubt of its being a great
“ aneurism, but there was a possibility also of its
“ being a vast abscess; and as it was resolved, in
“ consultation, that he should be carried into the
“ operation room; that a small incision should be
“ made; that the skin being cut, the bag itself
“ should be just touched with the point of a lancet;
“ if found to contain matter, it should be fully
“ opened; but if blood, that it was then to be
“ considered as an aneurism of so particular a kind,
“ as to entitle us to call for a full consultation.

“ I made an incision two inches and a half in
“ length; the great fascia in the hip, blue, and
“ very strong, formed the coat of the tumour; and
“ under that were seen the big fibres of the great
“ glutæus muscle. The knife was struck into it;
“ and

“ and large clots of very firm black blood rolled out
“ by the tenseness of the tumour, which began to
“ emit the clots in this way the moment that it was
“ opened at one point. There was one thing fur-
“ ther desirable before we put the patient to bed,
“ that we should understand the case so far as to be
“ able to report to the consultation, whether the
“ artery was absolutely open, and whether it was the
“ great artery of the hip. I continued therefore
“ (knowing that the opening I had made could be
“ covered with the point of the thumb) to pull out
“ a few more clots of blood, till the warm and
“ florid blood began to flow; I then pushed in a
“ tent-like compress into the small wound of the
“ tumour, (viz. of the fascia) laid a broad compress
“ over the outward wound, and put the patient to
“ bed, with one of the pupils holding the hand upon
“ his hip.

“ This was done at one o’clock, and at four the
“ consultation met, and the operation was per-
“ formed; and in my notes I find two steps of the
“ operation chiefly marked: 1. That upon opening
“ the tumour fully with an incision of eight inches
“ long, and turning out the great clots, the blood
“ was thrown out with a whisking noise, and with
“ such impetus, that the assistants were covered
“ with it, and in a moment twenty hands were
“ about the tumour, and the bag was filled with
“ sponges, and cloths of all kinds, which had no
“ better effect than the cloths which, in any
“ accident, the friends, in great confusion, wrap
“ round a wounded arm; for though the blood was
“ not thrown in a full stream, not in jets, it was
“ seen rising through the edges of the incision; it
“ floated by the sides of the cloths, which were
“ pressed down by the hands of the assistants. But
“ we knew it also by a more alarming sign; for
“ the man who was at first lying not flat, but sup-
“ porting himself on his elbows, fell down, his arms

“ fell lifeless, and without pulse, over the side of the
“ table, his head hung down, and was livid; he
“ uttered two or three heavy groans, and we be-
“ lieved him dead.

“ 2. Seeing in this critical moment that he was
“ to be saved, it was to be only by a sudden stroke.
“ I ran the bistoury upwards and downwards, and at
“ once made my incision two feet in length. I
“ thrust my hand down to the bottom of the tu-
“ mour, turned off the great sponge which was
“ over the artery, felt the warm jet of blood, put
“ the point of my finger upon the mouth of the
“ artery; then I felt distinctly its pulse, and then
“ only was I assured that the man was still alive.
“ The assistants laid aside the edges of this prodi-
“ gious bag, and sought out the several smaller
“ sponges which had been thrust in; and the bag
“ being deliberately cleaned, and its edges held
“ aside, I kept the fore-finger of my left-hand
“ steady upon the artery, passed one of the largest
“ needles round under my fore-finger, so as to sur-
“ round the artery: one of my friends tied the
“ ligature; and then, upon lifting the point of my
“ finger, it was distinctly seen, that it was the
“ posterior iliac artery; that the artery had been
“ cut fairly across, and had bled with open mouth;
“ that it was cut, and tied exactly where it turns
“ over the bone: and although the extremities were
“ cold, the face of a leaden colour, and the man
“ had ceased to groan, and lay as dead; though
“ the faint pulsation could not be felt through the
“ skin, in any part of the body; we saw the artery
“ beating so strongly, whenever I lifted my finger,
“ that we were assured of our patient’s safety; how-
“ ever, he was so low, that after laying down the
“ sides of the sac, and putting bandages round his
“ body to keep all firm, we were obliged to have
“ a bed brought in; and having given him some
“ cordials,

“ cordials, we left him to sleep in the great operation room, attended by the pupils and nurses.

“ He was cured of this great wound in less than seven months, although his cure was protracted by the foul suppuration of such a bag, and by exfoliations of the ileum and sacrum, which spoiled, not so much from their having been laid bare by the last sudden stroke of the knife, as by the aneurismal blood having lain upon them; the exfoliations were very large, and the sacrum especially continued exfoliating to the very day on which the wound closed.

“ I do not know whether this man be recovered entirely, for he left the house lame, from the contractions of the hip and ham, and walking by the help of a stick; but however he thought himself fit to undertake his profession, and went to England with that design. (Dr. Farquharson called upon him afterwards on his return, and found him walking stoutly, and in good health.)

“ This was one of the largest aneurisms ever heard of, containing not less than eight pounds of blood. It is an instance of one of the least probable of all wounds, viz. a small sharp point touching one of the deepest arteries, and one of the largest; and wounding it at the very point where it comes out from the trunk of the body, and where it cannot be compressed; for though my friend, Dr. Farquharson, tried to make some impression upon the descending aorta, by pressing down his fist into the belly, so as to touch the spine, still there was a deluge of blood upon cutting up the tumour, and the artery beat strongly under my finger.”

VARIX.

DESCRIPTION. The Varix is an unequal dilatation or swelling of the vein, which sometimes grows large and

and painful, and is apt to burst; causing a plentiful hæmorrhage, or an ulcer. Varices may be formed in all parts of the body, but chiefly in the legs and ankles: when small, they are not much attended to. Women with child, and costive habits, are most subject to them.

CAUSES. The most frequent are, pressure of the iliac vessels, particularly during pregnancy, obstructed mesentery and liver, strains, and violent exertions of the muscles. It may be also occasioned by a general relaxation of the vascular system.

CURE. The laced stocking, tightened at discretion, is the best palliative; but those which are large and painful will sometimes require to be opened, and even extirpated. Heister gives us the following as the readiest mode of treatment: to make a ligature around the lower part of the distended vein, then to open the tumour, and let out the grumous blood, healing as in other wounds.

It is also recommended to tie the vessel above and below the varix, as in the aneurism; but there can be no occasion for the ligature above, unless extirpation is intended, which may be more readily done by excision.

Those who are subject to varices should be rather abstemious in their diet, use proper exercise, bandage, and friction.

STRAINS or SPRAINS.

DESCRIPTION. They are injuries that chiefly happen about the joints, by suddenly overstretching the tendinous, membranous, or ligamentous parts: the consequences of which are pain, tumour, tension, and inflammation, in degree proportionate to the force of the cause, the resisting powers, and the number of the ligaments or tendons concerned. Sometimes a portion of the fibres is torn asunder, which circumstance adds greatly to the violence of

of the symptoms, and produces a lasting thickness and stiffness in the part.

Accidents of this kind most commonly happen to the wrist and ankle, which seem to be particularly guarded against them by strong ligamentous bands: these when overstretched therefore, are productive of more pain and inflammation, than some other parts.

When the injury happens at the ankle joint, and the surgeon's assistance has not been timely called for, the whole of the ankle and foot is sometimes so blown up and immoveable, and appears so much distorted, that it is difficult to determine whether the joint be displaced or not. The principal means towards ascertaining that point are, to mark the particular posture of the injured foot, to compare it with the other, and to notice the direction in which it most readily admits of motion. If dislocated, the sole is turned outward or inward, in opposite direction to the luxated part; or the foot is longer or shorter than in its natural state, according as it is displaced. Provided then, that the joint admits of some degree of motion directed upward and downward, and that the foot has neither of the inclinations here specified, the ankle may be declared free from dislocation. In other joints, on the like occasion, these symptoms may be respectively attended to.

CAUSES. A fall, blow, or sudden twist of the part, during violent exertion; whence the ligaments, muscles, and the adjacent tendons, become stretched beyond their natural power of action, or their fibres are partially ruptured.

CURE. Sprains may be regularly divided into three stages; the effusive, or state of sudden distension, the inflammatory, and that of debility, or loss of tone.

The popular remedy of plunging the part into cold water, if applied immediately, or very soon after

after the accident, is likely to have a good effect; by restraining the sudden effusion from the ligamentous parts, and giving a timely check to the swelling: for in all violent strains of the ligaments and tendons, the obstinate and painful thickness, which often attends them in the latter stage, is mostly in proportion to the size of the tumour which came on at first.

Topical bleeding, after the use of cold astringents, is much practised of late, with a view to prevent or check inflammation; and is repeated, according to the violence of the symptoms, and the strength or habit of the patient. It is also strongly recommended in the latter stage of the complaint, for the relief of the painfulness and thickness of the ligaments, &c. &c. Leeches are most applicable to the parts round the joints.

In the second, or inflammatory state, rest is absolutely necessary; thick compresses dipped in vinegar, alone, or mixed with equal parts of water, and frequently renewed, also in Goulard's vegeto-mineral water, are the most approved applications, till the tumour and painful tension are subsided. The degree of injury and consequent pain, the inflammation and tension in the part, their effect on the general system, together with the nature and strength of the constitution, will best indicate the necessity of blood-letting and internal remedies. For which see *Contusion*. When the inflammatory symptoms are much abated, particularly in leuco-phlegmatic habits, it will be proper to bathe the part with camphorated spirit, opodeldock, or arquebuse mixed with either of the two first mentioned discutients, or by themselves. Bandage will then be necessary, sufficient to support the lame parts; and the joint ought to be now and then gently put in motion with the assistance of the hand, to prevent rigidity in the ligamentous and tendinous parts.

Should the recovery be slow and tedious, it will
be

be right to immerge the part in cold water, or to pump upon it every other day at least, rubbing it well afterwards with a coarse cloth, or a flesh-brush.

Proper bandage applied soon after receiving the injury, has often proved effectual in slight cases; but it is well known to have been particularly so, after the tension and inflammation were removed, in that kind of lameness and painful spasm, which sometimes follow violent sprains and contusions.

The painful stiffness of the ligaments, &c. has been sometimes remedied by the means prescribed for ankylosis. The warm waters of Bath and Buxton have been successfully used, on such occasions, particularly when the injury was complicated with rheumatic affection.

Strengthening plasters and oily embrocations have little good effect: the former may serve as a kind of band or stay to the joint, and the latter are perhaps rather beneficial from the friction required in their use. Bandage with well fitted rollers, laced stockings or joint-pieces, dry friction and moderate exertion, are the best restoratives in the latter stage.

CONTUSIONS.

DESCRIPTION. These injuries may be distinguished under two different heads; viz. simple and complicated. The former is when the vessels remain entire, but, from a loss of tone, do not contribute the necessary action towards assisting the circulation of the fluids through the bruised part: or when the smaller vessels are ruptured, and the effused fluid becomes stagnant within the cellular membrane, producing discolouration, or what is called *Ecchymosis*. The latter is when a considerable blood-vessel is much injured or ruptured, or some principal nerve, tendon, muscle, membrane, or gland, is vehemently hurt, with or without an external wound.

Bruises,

Bruises, at first, are generally accompanied with a numb aching, afterwards a shooting throbbing pain, and a sense of pain in and about the part affected; and the stagnated fluid changes the natural colour of the skin to a variegated appearance, of red, brown, leaden, black, yellow, and green.

When a considerable artery is materially injured, it is not unlikely to give rise to an aneurism; if a large vein or lymphatic, to varix or œdema; if a principal nerve or tendon be much hurt, palsy, wasting or lameness in the limb; when the muscles are deeply affected, abscess and gangrene, or in vitiated habits, fordid ulcers; if the capsular ligament, the periosteum or bone, anchylosis or caries; and if much injury be done to a glandular part, scirrhus and cancer may ensue. Internal contusion, when violent and extensive, is often succeeded by disease and death. When a bruise is attended with a wound, the separation of the parts generally extends to some distance around, and it comes under the denomination of a *Complicated Wound*. Contusions then are of more or less moment, according to the degree of force or resistance with which they were received, the situation or importance of the part injured, and the nature of the habit.

CAUSES. Contusions are occasioned by the action or resistance of some hard obtuse body.

CURE. The internal treatment necessary in such injuries are, during the inflammatory stage, bleeding agreeable to the quantity of injury, nature of the part, and constitution: cooling laxatives, particularly by injections, if the hurt be in the belly; nitrous and other neutral attenuating medicines, Dover's powder, opiates, or the diaphoretic remedy with tinct. of opium, and antimonial or ipecacuanha wine, as directed under the article, *Injuries of the Head*.

Externally, thick compresses wetted with the best white wine vinegar warmed, or a solution of sal

sal ammoniac in oxycrate; also, wrung out of old verjuice, or moistened with the saturnine water slightly warmed or otherwise. If the ecchymosis should not be sufficiently attenuated by these means to be absorbed or dispersed, the coagulated fluid will most probably require to be evacuated; which may be done by a slight incision at or near the most depending edge of the bruised and distended part.

Languid and watery habits require more powerful discutients; such as, the addition of a third part or more of camphorated spirit, the saponaceous liniment, arquebusade, the strong beer poultice, &c. Should inflammation, suppuration, gangrene, scirrhus, or any other incident occur, further information with respect to its treatment may be seen under each separate head.

In slighter cases, where the chief intention is to restrain effusion, or strengthen the tone of the parts, cold-restringent applications, occasionally mixed with spirituous or saponaceous medicines, answer best at the first stage; at other times, a solution of volatile salts in vegetable acids is to be preferred.

Considerable relief and increase of motion has been obtained in a contused shoulder of very long standing, in a scrophulous habit, from repeated applications of blisters, and afterwards receiving the Bath waters upon the part immediately from the pump. In this instance the muscles and ligaments had contracted great rigidity and stiffness, and the head of the bone had both the feel and appearance of being much enlarged, scarcely admitting the least motion without severe pain. In such cases local blood-letting with leeches has been of service.

In violent bruises the structure of the vessels is sometimes wholly destroyed; a loss of substance naturally follows, and produces an ulcerous sore. If the bone be at the same time much injured, the whole of the diseased part must separate, or be separated,

parated, before the fore can be healed. Vide, *Spina Ventosa*.

DISLOCATIONS *in* GENERAL.

DESCRIPTION. A dislocation or luxation, is when the head of the bone is removed from its articulation. Luxations may be divided into classes, *Simple* and *Compound*; the latter when complicated with fracture, wound, &c.

To be perfectly acquainted with the nature of a dislocation, and its cure, it is necessary to have a clear idea of the natural state of the joint, as well as the attachment and uses of the surrounding ligaments and the muscles.

A luxation is to be ascertained, by the want of regular motion in the joint, by distortion of the part, by increase or diminution in the length of the injured limb, by hollowness over the joint, and the projection of the head of the bone in an opposite direction.

Luxations from an internal cause may be known by the limb being moveable in any direction; from the hollowness in the joint and opposite projection; from the increased length of the dislocated limb; and from the part being free from inflammation, or less painful than that from external cause.

In this kind of accident, as in fractures, violent force is not so necessary towards reduction, as peculiar skill and management. The muscles and tendinous expansions, which are stretched in consequence of the bone being displaced, should be brought into as relaxed a state as possible; to which end, it will be necessary to place the joint below in the bent position.

When luxations are difficult of reduction, it is generally supposed that the capsular ligament is ruptured: this may sometimes be the case, but it

ought not to be a hindrance to repeated and varied attempts towards their reduction. Great obstruction sometimes arises, from fixing one point of extension below the lower extremity of the dislocated bone. The extension ought always to be gradual; by which means, the degree of force necessary to bring the head of the bone on a proper level with the socket may be effected, without doing the injury to the parts concerned, which sudden and violent force has been known to produce.

The chief maxims then to be observed in the reduction of luxated joints are, steadfastly to fix the resisting point, to put the muscles and tendons in connection with the bone into a relaxed state, and to make the necessary extension gradually on that bone only.

The received opinion of the synovia concreting and choking up the socket, so as to produce a stiff joint, is entirely groundless: the cause of such immobility are, fracture, erosion, or caries, in the head of the bone or the socket, the lacerated parts growing firmly together, or a confirmed stiffness in the ligamentous and tendinous expansions.

CAUSES. The causes of luxations are either external or internal; the former arising from falls, blows, jumping, &c. the latter from weakness and relaxation of the ligament, or a congestion of humours in the cavity of the joint.

CURE. In dislocations, as well as fractures, the bone is to be replaced by regular extension, and necessary pressure. A sufficient degree of extension must be made, to bring the head of the bone on a line with the edge of the socket; which done, the muscles themselves will feel their power, and seldom fail to restore it to its proper place: but this may be more readily brought about with the towel fixed round the neck of the surgeon, in some cases, or by compressing the part with the hand, in others.

Luxations should be reduced as soon as possible, unless

unless the tension and inflammation be too great to admit the trial, when it may be necessary to defer the reduction, till the impeding symptoms be removed: this is to be brought about by timely evacuations, saturnine solutions or poultices, &c. &c. and an easy position of the limb. The application of bandage after reduction is principally necessary, in dislocations arising from or produced by relaxation in the ligamentous parts; and will sometimes be of little use, unless assisted by cold bathing, pumping upon the part, friction, spirituous and saponaceous embrocations, &c.

Dislocations complicated with a wound, hæmorrhage, laceration, abscess, &c. are of dangerous tendency, and require similar treatment with fractures accompanied with the like circumstances.

Luxations of the humerus after various and violent attempts, have been reduced by the most simple means. A woman who lived near Colchester was famous for reducing the luxated shoulder-bone; her method was, to bend the lower arm and take firm hold of the elbow, then repeatedly to make a rotatory movement of the arm, and after having raised the elbow above the shoulder, to place the left hand doubled under the arm-pit, and carry the arm suddenly down to the patient's side.

A luxated humerus of some weeks standing, is known to have been reduced by means of Hunter's pulleys and the towel; the patient having been previously relaxed by evacuations, low diet, warm bathing, and repeated application of the vapour bath and oleose embrocations to the joint. In such cases, blisters repeatedly applied over the joint will greatly assist towards recovering the tone of the parts.

DISLOCATIONS *in* PARTICULAR.

Luxated Jaw. The lower jaw is subject to luxa-
 4 tion

tion forward, and on one or both sides; if displaced on one side only, the chin is distorted on the other, and the mouth is widest on the opposite side: if on both sides, the mouth gapes wide, and the lower range of teeth projects, the chin inclines towards the breast, and is thrown strait forward, and the temporal muscles are rigid. The reduction is not difficult, if attempted soon after the accident; but when both sides suffer, bad symptoms ensue, unless the reduction be quickly performed.

In both cases, the patient is to be placed on a low seat, and held firm by an assistant, the surgeon is then to thrust his two thumbs, wrapped round with the corner of a handkerchief or cloth, as far back as possible into the patient's mouth, placing his fingers on the outside of the jaws: he is then to press the hinder part of the jaw forcibly downward and backward, at the same time endeavouring to raise the fore part with his fingers. If one head only be luxated, it should be pushed towards the injured side. Care must be taken to guard the thumbs well, and to withdraw them as quickly as possible. Should the jaw be more than ordinarily weak after reduction, a supporting bandage should be carried from the chin, and fastened at the upper part of the head.

Luxated Neck. In this case, the condyloid processes of the occiput are thrown out of the glenoid cavities of the atlas, or upper vertebra of the neck; which, without immediate assistance, must prove fatal. Persons killed by this kind of luxation, are said to have broken their necks. It is easily known, by the sudden deprivation of sense and motion, by the distortion of the head, and by the chin being forced down close upon the breast. The best mode of reduction is, to place the knees upon the patient's shoulders, closely retaining the neck between them; then quickly seizing the head with both hands, to make a powerful extension of the neck,

moving the head gently from side to side. Luxations of the other vertebræ of the neck are to be treated in like manner.

Luxated Spinal Vertebræ. The Vertebræ of the back cannot be completely displaced without breaking the processes. Luxations of this kind are known by the distortion of the spine, a paralysis below the luxated joint, and an involuntary discharge of urine and fæces; without relief the lower extremities grow dead by degrees, and the death of the patient generally follows. The violence of the symptoms is in proportion to the hurt received in the spinal marrow. The most likely means of reduction are, inclining the patient over a cask, or some other cylindrical body, then pressing down the luxated vertebra, at the same time pushing the superior part of the body upwards.

If the vertebra protrude on one side, the patient should be inclined towards the other; one assistant depressing the hip, and another the opposite shoulder. After the part is reduced, bleeding and gentle diaphoretics are proper, such as Dover's powder, or the antimonial tincture and laudanum, as in injuries of the head; compresses wetted with saturnine solution, Mindererus's spirit, camphorated spirit, &c. may be applied to the part, and retained thereon with the scapulary and napkin; and the body is to be laid in the most convenient posture.

Luxated Os Coccygis. This bone is sometimes forced inwards by a violent fall or blow, and in difficult labours is liable to be pushed outward; in either of which cases the strait gut and lower parts of the spine are subject to great pain, inflammation, and abscess: a constipation requiring manual assistance also follows. This accident is to be treated like the fracture.

Luxated Clavicle. This seldom happens. It may be dislocated either from the sternum or the processus acromion; and is to be reduced by drawing the
shoulders

shoulders back, and necessary pressure: the part should then be properly confined to its place by compress and bandage; observing particularly, to sustain the weight of the arm by a sling.

Parey and others have remarked, that the collar-bone when luxated near the processus acromion, has been mistaken for a dislocated shoulder; but each may be readily distinguished by observing that in the latter, the superior part of the scapula is prominent, whereas in the former, a hollow is to be seen over the place where the collar-bone is separated. The distinction may be further noted by not finding the head of the shoulder-bone in or near the axilla; also, by perceiving the natural rotundity of the head of the bone upon raising the whole arm, and by being able to place the arm close to the patient's side; all which particulars do not occur when the shoulder-bone is displaced.

Luxated Humerus. The shoulder-bone is of all others the most subject to dislocation. It may be displaced forward, backward, and downward; never upward, unless the acromion and coracoid processes of the shoulder-blade should chance to be fractured.

When luxated downward, a cavity appears on the fore-part of the shoulder, the head of the bone is to be felt in or near the arm-pit, and the arm cannot be pressed close to the side; the acromion appears to project further than usual, and the luxated arm is longer than the other, and cannot be raised without great pain.

When luxated forward, the same cavity and projection appear in front, and the head of the bone forms a protuberance towards the breast, under the pectoral muscle. In the second and third case, the arm cannot be moved without extreme pain, and the nerves and blood-vessels are liable to great injury.

The principal means to be employed in the reduction

duction of this, as well as most other luxations, are, to elude the resisting force of the muscles, as much as possible, to use a gradual and equable extension; and not to attempt raising the head of the bone, till it is brought nearly even with the socket. These general rules duly attended to, cannot fail of success, except in inveterate cases.

The most safe and ready method is that with the large napkin and towel. The patient being seated on the floor, or on a low stool, with his two feet *held up*, let the middle of a long towel be fixed against the upper part of the chest; one end of which is to be passed through a staple, and tied fast to the other, or by any means held fast, so as to secure the body from giving way to the extension. The extension is then to be made at a fixed point above the elbow joint, which should be kept bent in order to relax the biceps and brachiaëus muscles. The broad part of a napkin of proper length, being previously applied under the patient's arm-pit, and the two ends tied behind the neck of the operator, as soon as he finds that the extending power has brought it even with the verge of the cup, he is to endeavour with the help of this sling to raise the head of the bone, and, at the same time, to bear the arm gently downwards like a lever. During the extension, an assistant ought to press against and keep back the neck of the scapula; for want of doing which, and raising the feet from the floor, many a surgeon has been foiled in the attempt.

In recent cases, and weak relaxed habits, sufficient extension may be made by the foregoing process being regularly and attentively pursued; but in strong muscular subjects, the resistance is seldom overcome without the aid of greater mechanical powers. Various are the means and contrivances which have been invented for this purpose: the ladder, gate, and pole, have been long justly discarded; the ball and heel is still in practice; the ambie is
not

not in so great request as formerly; Mr. Freke's Commander is a good improvement of that instrument, and when fixed parallel to the side of the patient, has answered well in difficult cases. This and Mr. Hunter's pullies have been preferred, but the instrument invented by the late ingenious Dr. Robt. Hamilton, of Lynn, combines every particular advantage of the rest, at the same time that it serves to keep back the scapula. Yet after all, when the strongest powers have been exerted without effect, a slight turn of the muscles, or repeated rotatory motion with the arm raised, and a sudden depression, have proved successful.

If the shoulder-bone be luxated so that the head lies under the pectoral muscle, the arm should be brought forward, to relax the muscle, and the head of the bone must be pressed towards the arm-pit; the like principle of relaxation and pressure should also be attempted, when the bone is forced backward, towards the shoulder-blade.

Luxations of three months standing have been reduced, by fixing one end of the pullies to a beam of sufficient height, and the other to ligatures fastened round the wrist, and raising the patient by the mechanical powers gradually from the ground; two persons at the same time supporting the arm above the elbow, to lessen the weight sustained by the wrist. Mr. White, of Manchester, mentions two obstinate cases, wherein this prevailed so far, as to carry the head of the humerus into the axilla; whence it was easily restored to its proper place, with the heel. The want of a pulley has been supplied by a person taller than the patient, raising the arm over his shoulder, and lifting the patient by it from the ground, also by hoisting him up by the arm at the upper part of a door; an expedient not quite so regular. A compress and bandage are commonly applied after reduction; but little more is then necessary to be done than keeping the arm

close to the side, and supporting it with a sling passed round the neck; unless the ligaments are so much relaxed as to require confinement. Except in such cases, it will be proper, after the tension is off, to give the joint a gentle degree of motion now and then, otherwise the ligaments are apt to get stiff and thicken; to remedy which, the vapour bath, embrocation with neat's foot oil, &c. and after^{all}, repeated blisters, have been applied with success.

Luxated Elbow. The ulna or cubitus being situated inferiorly, performs the whole flexion and extension of the arm, the radius moving with it. The latter bone is principally in motion in the pronation and supination of the hand. The ulna is so articulated with the lower head of the humerus, and fastened down with such strong ligaments, that it seldom suffers a perfect luxation, except when the process olecranon is fractured, or the ligaments are torn or weakened.

The Elbow Joint may be luxated, forward, backward, outward, and inward. When the ulna is thrown backward, which is the most frequent luxation of this part, the arm is bent and shortened, and violent pains arise from the distracted tendons and ligaments, the head of the humerus is protuberant in the bend of the arm, the olecranon protrudes behind, and a cavity is to be perceived between the bones. This luxation is to be reduced by steadily drawing the arm forward, bending the elbow, and bearing back the humerus.

If the luxation be forward, which can hardly happen unless the olecranon is fractured, the protuberance is external, and the hollow internal. Due extension is here necessary; and if the olecranon be broken, it must be treated according to the method recommended for the fractured ulna.

The inward and outward luxation are to be assisted after the method directed in the first case.

Great

Great pain and inflammation generally attend accidents of this kind; it will therefore be right to guard against those symptoms in the manner heretofore directed.

Luxated Wrist. This part is subject to dislocation four different ways; more easily forward and backward than laterally: sometimes it is complicated with the distortion of one or more of the small bones. The wrist is to be reduced by a regular extension and pressure. The compression may be better effected, by placing the hand on a flat board or table.

Luxated Metacarpal Bones and Fingers. These bones are easily to be reduced by regular extension and pressure, and generally require bandage.

Luxated Femur. The head of the thigh-bone is usually displaced downward and forward; in which case the luxated limb is longer than the other, the knee and foot turning outward; the head of the bone lies in the lower part of the groin, towards the large foramen of the os pubis, and a cavity is perceivable in the buttock.

It is more seldom luxated upward and outward; when the hollowness is found in the groin, and the projection upon the buttock; the limb being shorter, and the foot turning inward.

It is to be observed, that the fractured neck of the thigh-bone may be distinguished from the luxation, by the acute pain attending the former, by the extensive power in moving the limb, and by the grating of the bones during that motion. The distinction ought to be positively ascertained before any attempt is made towards reduction; the extension required to replace the fracture, being little more than the subsiding tension will admit of: whereas the luxation demands powerful and immediate efforts.

This luxation is to be reduced by placing the patient either on his side or back; then passing a long towel or two tied together, under the thigh and

and over the groin, and fastening the same to the head of the bed, or a staple fixed in a line with the body; then fixing a cloth or two of the same kind to the thigh, two or more powerful assistants are required to make equal extension, observing to keep the knee bent. When the extension is sufficiently made, the surgeon is to carry the knee towards the belly of the patient, and press the head of the bone with the hand or sling, towards the socket. The pully, with a proper fixed point, is the most regular extensor on all such occasions. A compress and convenient bandage are generally applied after reduction.

The curved position of both leg and thigh is looked upon by some practitioners as most favouring reduction, upon the plan of relaxing the muscles: an attempt of that kind should be made prior to more powerful means, which has sometimes had the desired effect.

Luxated Patella. The knee-pan is mostly displaced on the outside and inside of the joint: but seldom suffers a perfect luxation, except when the knee goes with it. It is seldom thrown upward, unless from a rupture or relaxation of the connecting ligament. It is to be reduced by extending the leg, and using some force to press the bone into its proper place. Rest and convenient bandage will be necessary for a time; yet the knee should be now and then gently bent.

Luxated Knee. The tibia may be forced from under the head of the thigh-bone laterally or backward; scarcely ever forward, from the resistance of the patella and ligaments. It is not difficult to discover a luxation of this joint, on account of its thin covering; but the bones are seldom so well replaced as to prevent stiffness, which more commonly happens from the injury done to the tendinous and ligamentous expansions; it will therefore be proper to give frequent motion to the joint, during the cure.

The

The bones are to be replaced by regular extension above and below the knee, gently bending it, and endeavouring to raise the head of the tibia with the hands or sling.

Sometimes the fibula is separated from the tibia, and driven upward or downward; this mostly happens when the foot has been dislocated outward; and it is to be replaced by gentle extension, and by pressing it into its proper station. Bandage is necessary.

Luxated Ankle. The foot is subject to dislocation, outward, inward, forward, and backward. When displaced inwardly, the bottom of the foot is turned outward; when outwardly, the contrary happens. If the luxation be forward, the heel is shortened, and the foot is lengthened: the foot always inclining in opposite direction to the dislocated part.

The ankle is seldom luxated externally, without breaking the lower part of the fibula, or separating it from the tibia: in which case, provided the accident be attended with much inflammation, it will be both difficult and dangerous to attempt reduction until those symptoms are abated, otherwise the earlier it is done the better.

When the luxation is thus complicated, the leg should be held and extended, by an assistant above; and a skilful person below the joint; who is to bend the foot up, whilst the surgeon is endeavouring to press the bones into their proper place. In a case of this kind, it will be impossible to keep the bones in their right station, without applying splints in an opposite direction. The eighteen-tailed bandage ought to be used from the first, for the convenience of repeating the necessary applications without disturbing the limb. This kind of luxation is frequently accompanied with violent symptoms.

Luxated Bones of the Foot and Toes. In all such cases, the same method is to be pursued as is directed for reduction and cure of luxation in the superior

perior extremities. Rest in bed, or on a couch, is here particularly necessary. The *heel-bone* may be luxated both inward and outward: it is generally attended with severe pain, and may be known from the two opposites, viz. tumour and cavity. It is to be replaced by means of extension and pressure.

FRACTURES *in* GENERAL.

DESCRIPTION. Fractures are commonly divided into two denominations; *the Simple*, when the bone alone is injured, and the *Compound*, when attended with a wound. Subordinate distinctions are also made, by the terms, *Transverse*, *Oblique*, &c.

The Simple Fracture is known by the irregular shape of that part of the limb where the bone is injured, want of power to move it, considerable pain on motion, a jarring noise or feel upon pressing or moving the limb, which is generally shorter than its fellow. Sometimes a space is to be felt between the broken ends of the bone; at other times, a prominence, denoting that one end rides the other, and that the separation is irregular or oblique. The indications are sufficiently evident soon after the accident; but if the limb be much swelled or inflamed, and the patient be timid and fretful, it will not be so easy to ascertain the exact state of the injury till those symptoms are abated.

The Compound Fracture is evident to both sight and touch. Such fractures, when accompanied with dislocation, great contusion, hæmorrhage, or caries, are very difficult of cure, and more so if they happen near the heads of the bones, and the ligaments, tendons, or joints, suffer much. If in consequence of the fracture, violent pain and convulsions come on, some principal nerve is probably injured; if much compressed, loss of sense and motion, together with wasting of the limb, are likely to ensue. If the larger vessels suffer pressure or great injury, gangrene is the likely consequence. Hæ-
morrhage

morrhage is to be attended to, previous to any other concern. When the ends of a fractured bone are forced through the muscles and common integuments, and the wound closely encircles the bone, an enlargement is immediately necessary; and sometimes it has been thought proper to saw the projecting end off, particularly when the fracture is oblique, or the end is much shattered. Should the fracture happen on a part that is carious, the union will be much retarded; but should it proceed from caries, relief is more to be wished for than expected, except from amputation.

The late improvements with regard to the management and cure of *Simple Fractures*, have almost entirely subverted the mode of treatment handed down by former practitioners. Violent extension, tight bandage, and plasters are nearly given up; and in their stead, the first principles observed are, putting the muscles into a relaxed state, keeping the joint bent, and laying the limb in the most easy posture upon a soft pillow. Notwithstanding the evident proofs of utility and comfort which both patient and surgeon have daily experienced from following such means in particular stages and states of fractures, is it not extraordinary, that men of the highest rank in the profession should still differ so much in their practice? When it happens so, there is yet one given point to steer by, which for the most part proves right; namely, to take the middle course: for when extremely opposite opinions are too warmly supported by men of character and credit in the profession, prejudice and error will manifestly appear against them, not without injury to the disputants, and a probable diminution of the confidence which is due to the professional line.

Objections may be made to laying the fractured limb invariably and constantly in a curved position. It is very well known that fractures of the olecranon and patella require the limb to be placed in
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the strait position. With oblique fractures, particularly, when the bone rides, after the tension and inflammation are removed, the flexed position may rather favour the contractile power of the muscles, and produce an irregular union.

It is advanced, that no greater inconvenience can arise from keeping the limb in the curved position throughout the cure, than in the extended state; yet, in two simple fractures of the thigh-bone, it is well known that the foot and knee ever after turned too much outwards, from being constantly laid on the side with the knee bent; notwithstanding which, the union of the bone appeared to be uniform and regular.

No great defect can arise from reducing the bone by keeping the whole limb in a strait posture, provided there be little or no tension upon the part; but if the injury has been produced by a heavy weight falling upon, or passing over the limb, or by a violent blow from some hard body, although no wound should appear, much muscular inflammation and tension will ensue. Under such circumstances, the precaution of placing the limb in the most easy and relaxed posture is absolutely necessary, until those symptoms are removed. The following practice is therefore recommended, after many years experience. To place the limb in the strait, or bent position, according to the apparent necessity of the occasion, in proportion to the tension, present, or rationally to be expected, from the violence of the injury, and nature of the constitution; and when the inflammatory symptoms are abated, gradually to change it from the curved to the extended posture, so as not to excite pain sufficient to produce contraction of the muscles: this method, properly pursued, with fractures that cannot be perfectly reduced at first, will obviate the objections made to the extreme of either practice.

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When one end of the fractured bone lies below the level of the other end, the upper part was generally supposed to be the rising end: this the great improver of the art, the late Mr. Pott, has thrown into a different light; shewing that the superior end retains its place, and that it is the weight of the inferior part of the limb, together with the action of the muscles, that bear down the lower end of the bone; also, that this evil is solely to be remedied by raising the inferior extremity. But, with submission to so great authority, it may be asked, whether the muscles attached to the superior part of the bone, do not contribute in some degree to destroy the level, and render it proper gently to compress the upper, as well as the lower extremity of the fractured bone.

Bandage and splints have undergone necessary improvement; the eighteen-tailed bandage is evidently preferable to the circular roller, in Simple, as well as Compound Fractures; since every part of the business can be transacted without disturbing the limb; still, when the callus begins to form, it will be better to use the circular bandage.

Short splints do not steady the whole limb; they act merely as partial compresses, and those of the most uneasy kind; whereas those that reach from joint to joint, have full power over, and consequently guard, every part of the limb. Those invented by Mr. Sharp, of Bartholomew's, and Mr. Martin, of Thomas's Hospitals, have every possible advantage in fractured legs.

The faculty are much obliged to the mechanical genius of Mr. James Stanton, a miller, at Weybread in Suffolk, for his invention of a machine for the lodgment of a fractured leg; which admits of movement in every direction, to the greater ease of the patient, and security of the limb.

The principal applications are cloths dipped in oxycrate, saturnine solutions, solution of crude ammoniac,

moniac, in vinegar, and the like ; keeping the limb constantly moist with one or other, during the inflammation and tension ; at the same time, bleeding and other evacuations should be repeated, according to the nature of the habit : in which state, short splints and bandage must be hurtful. Splints of a proper length and shape may serve to keep the limb steady ; but the pillow is most agreeable at such a period, both as a support and lodgment. Refrigerants have not always so good an effect as warm discutients, in leucophlegmatic habits ; such as Mindererus's spirit, mixed with about a fourth part brandy, or camphorated spirit. Plasters, cerates, and the like, are adhesive and daubing, without any particular use.

In *Compound Fractures*, that is to say, those that are accompanied with a wound, the first point to be considered is, the probability of saving the limb. When the fracture happens to be near a joint, and the bone is greatly crushed, the ligament is torn, the joint is exposed, or the blood-vessels are so much injured, that there is no probability of the circulation being restored, amputation should be immediately performed.

If the business of amputation has been deferred till the limb is generally inflamed and tumefied, there will be little prospect of success attending it, till those symptoms are removed ; and if gangrene be seen to approach, the operation must be postponed till a line of separation appears in young persons, and the dead part be perfectly separated in those more advanced in life. In the mean time, it will be proper to support the patient with cordial nutriment, and a liberal portion of the bark. Should he be able to recover from this stage, future operations are to be governed by existing circumstances.

There are three different stages in fractures of this kind, which are particularly ordered to be attended to, viz. Inflammation, Suppuration, and Gangrene.

These

These have been separately treated of; it may not be amiss, however, to particularise the treatment to be observed, when they are the consequents of fractures.

Should the bone protrude, or be girted in the wound, it cannot well be reduced without further opening; and it is sometimes thought necessary, particularly when the end is pointed, to saw it off. If the bone be crushed, such pieces as are detached are ordered also to be removed, without violence or laceration. A gentle extension is necessary towards the reduction of this fracture; and the limb must be placed in as easy and relaxed a state as the nature of the case will admit.

The curative intentions regularly prescribed are, to prevent or remove inflammation, by evacuants and cooling medicines; to moderate the suppurative process, which in some cases proves inevitable, by discutients; and in some weak habits, to promote it, if found necessary, by means of emollient poultices and a nutritious diet; and to obviate gangrene, or bring forward a separation, by warm antiseptic poultices, and bark in as large doses and quantity as the stomach can be made able to bear. Vide *Inflammation, &c. Wounds, and Ulcers*.—Soft lint is recommended as the best dressing to the wound, whilst the discharge is copious, covered with a thick pledgit of fine tow thinly spread with white cerate, and the eighteen-tailed bandage; also such splints as will reach from joint to joint, if to be borne without pain, otherwise the pillow only.

But, without all this regular method of proceeding, several instances, and of the worst kind, can be produced; that have done well in a much shorter time than usual, by the simple applications of thick pledgits of lint repeatedly wetted with the traumatic balsam, and a large thin compress kept constantly moist with Goulard's vegeto-mineral water, taking care to expose the wound as little as possible to the

air, and mollifying the balsam with a little honey of roses, where irritability requires it: a pledgit of soft tow, and a light compress nipped out of oxycrate, with or without the tailed bandage, after the abatement of the inflammation and tension; a long splint or two, to steady the limb against spasms, which frequently occur during sleep; and a pillow or two; keeping the limb for some time in the curved position.

It is most probable, that the wounds in fractures being treated after the preceding method, and remaining as it were sealed up and unexposed, till the eighth, tenth, and twelfth day after the accident, is a principal cause of the cure being completed in so much shorter time than usual. The pleasant aspect of the sores, after being closed up for ten days at least, and the happy event which followed this simple process, in three instances, where the bone had greatly protruded, in one of which a large supuration happened, and much matter was daily pressed away from under the dressings, are convincing proofs that this method deserves preference. Should the parts be so much injured, or the constitution be so bad, as inevitably to occasion gangrene, poultices must be repeatedly applied; at the same time, exposure to the air should be avoided as much as possible.

Further authorities respecting this mode of practice may be found in *Mr. Mudge's* ingenious account of the *Vis Vita*, wherein this summary practice is proved to have been successful, even in the most complicated cases: also in *Mr. Wilmer's* book of *Cases*, or *Mr. Clare's Essay on the Cure of Abscesses*, in which is to be found *Dr. Hunter's* account of the maniacal patient, whose leg was desperately fractured, yet did well in a much shorter time than usual, with nothing more than a bundle of feathers sticking to it.

Events

Events in general have given but little encouragement towards the attempt to save limbs desperately fractured, in the London Hospitals; whereas in the country, the business seldom fails of success, unless in cases of the worst kind, conjoined with a bad constitution. The want of a free circulation of air is the probable cause of this difference, together with a mixture of depraved animal heat, particularly in the night time. Such are the obstacles which render success extremely doubtful in hospitals, notwithstanding the endeavour is supported with the best of skill and care.

FRACTURES IN PARTICULAR.

It cannot be thought improper, in this place, to give a short description of each fracture, and its treatment; at the same time, it should be understood, that bleeding, evacuates, diaphoretics, refrigerants, opiates, &c. are to be occasionally administered, and the general dressings applied; also that regimen and diet must be properly attended to, according to the nature of the injury received, and the patient's habit.

Fractured Skull. Vide *Wounds and Injuries of the Head.*

Fractured Nose. If the injury be violent, it will be difficult to effect a cure without deformity; and there is sometimes considerable danger from the nearness of the brain; a caries is also sometimes the consequence. When the nose inclines to one side, the cartilage is probably displaced. The depressed parts may be raised with the assistance of a director, quill, or some such convenient instrument, and replaced with the finger and thumb; after which, the part may be supported by a tent made of lint and a retentive plaster. If it be accompanied with a wound, and inflammation comes on, canulas and

tents may be injurious; it will then be proper to dress with the balsam and the saturnine water.

Fractured Jaw. Fractured Jaws are to be known by the sight, the touch, and the irregular position of the teeth. The divided parts are reducible by opposite pressure, with the fore-finger of one hand in the mouth, and the fingers of the other applied externally. The necessary applications are saturnine preparations, and a double-headed narrow roller to suspend and pass over the jaw: loose teeth are to be fixed by means of gold or silver wire, or fine silk waxed. Pasteboard splints, conveniently shaped, and lined with soft linen cloth, are also recommended.

If complicated with a wound, no further bandage should be used, during inflammation, than is necessary to suspend the part and keep on the dressings; and the mouth should be frequently syringed with a lotion made of barley water and honey of roses; otherwise the saliva will become acrid and foetid. Bleeding and other evacuations are proper and necessary in injuries of this kind, as they are commonly followed by swelling and inflammation; and broth, gruel, sagoe, and milk gruel, are the aliment most proper in such complaints, particularly the latter.

Fractured Clavicle. The Collar-bone, from its weakness and transverse position, is very liable to be broken; it is easily discovered by the eye and touch, and by the dropping of the humerus, and its inclination to the breast. When it is fractured obliquely, it is a difficult task to keep the bones from riding one over the other. The principal means towards reducing it, and retaining it in its proper state, are, raising the elbow, supporting the whole arm, and keeping the shoulder back; which may be readily effected, by suspending the arm in a sling or handkerchief tied round the neck, and as it were pinioning the patient. The method for reduction generally directed is, for an assistant to draw back the shoulders against his knee, or a narrow-backed chair,

chair, whilst the surgeon endeavours by pressure to replace the broken ends of the bone ; but such force is seldom necessary.

Fractured Sternum. A fracture of this part may be distinguished, by pressing upon the part, and its inequality. The principal danger arises from the injury done to the subjacent parts. When the bone is much shattered, and the pieces are driven in, it will be proper to raise or remove them, with the assistance of the elevator and forceps ; and in some cases the trephine may be necessary : but to perforate, with the design of discharging extravasated blood from between the duplicature of the mediastinum, would be at least a vain attempt. The chief intentions in this injury are, to remove the loose pointed pieces of bone, and to obviate inflammation by every possible means.

Fractured Scapula. The Shoulder-blade is very seldom fractured ; the part most subject to that accident is the Processus Acromion ; it may be distinguished from a luxated shoulder, by the grating of the bones, and from the patient being able to place the elbow and arm close to the side. The chief point to be observed toward the cure is, to keep the arm sufficiently raised and supported in a sling. Fractures in the Coracoid process, and the neck of the Scapula, are to be treated in the same manner : the latter is attended with much danger to the nerves and blood-vessels near the part. A compress placed in the arm-pit, and the spica bandage, are necessary aids.

Fractured Rib. This injury is to be known by the crackling feel beneath the fingers, and extreme tenderness upon pressure ; also, by a puffiness around the spot where the injury is received, and a painful catching of the breath on inspiration.

The chief business to be observed in this fracture is, to restrain the dilatation of the chest, by applying a long thin flannel roller, moderately tight, round

that part. Due attention ought also to be paid to the state of the bone, and to the concomitant symptoms: for if the ends of the bone press inward, they will create a pricking pain, inflammation, cough, fever, abscess, &c. as in the pleurisy; during which symptoms, the bandage must be omitted.

A boundless Emphysema is sometimes the consequence of the Lungs being wounded by the sharp points of the bone; which is to be treated accordingly. Vide *Paracentesis*.

In a case of this kind, M. Le Dran, in Obs. 29, shews the good effect of applying a thick compress dipped in a defensative, made with armenian bole, the white of an egg, and vinegar, over the injured part; and a dry thick compress over each end of the fractured bone, properly confined with a napkin; which application was renewed as the napkin grew slack. This method, and repeated bleeding, he tells us, nearly reduced the emphysematous swelling, which was considerable, in twenty-four hours.

If the fracture be accompanied with a wound and hæmorrhage, from the intercostal artery, it will require some address to secure the vessel; the curved needle and ligature is most handy, which, in case of great difficulty, must be passed round the rib, having first placed a compress over the fulcus, at the lower part of it. The tenaculum is a convenient instrument on such occasion, provided the wound be of sufficient size to admit of its use.

A simple fracture of the rib may be easily cured, by making an uniform bandage round the chest, with sufficient tightness to prevent its dilatation; but when the pleura or integuments are pierced through by the bone, it is generally attended with severe and dangerous symptoms.

Fractured Vertebra. This seldom happens without great injury to the spinal marrow, producing palsy in the parts beneath, suppression of urine, &c. If the injury be confined to the posterior processes, or the

acute tubercles, it may be remedied by replacing them with the fingers, and applying narrow compresses, dipped in a defensative of white of egg, flour, and vinegar, to be secured with the napkin and scapulary; or, compresses dipped in oxycrate, and fixed on each side the spinal ridge, with pasteboard and a broad flannel bandage. Fractures in these bones are to be ascertained by the pain or numbness which follows pressure, and their loose state.

If the body of the vertebra be broken, the spinal marrow must be greatly injured, and death commonly follows. When the transverse processes are broken, the heads of the ribs must suffer, and the parts are not to be easily replaced; much danger attends this case. The fragments which press upon the spinal marrow, if loose, should be removed as soon as possible; and the wound must be dressed with the balsam and honey of roses, compresses dipped in oxycrate, and a slight bandage.

Fractured Os Sacrum and Coccyx. In accidents of this kind, the broken parts may be sometimes tolerably reduced, by passing the fore-finger of one hand up the rectum, and making an opposite pressure externally: a compress, and the T bandage, are to be used; and the patient must keep his bed some weeks; when he sits up, it must be on a chair open at the bottom.

Fractured Os Innominatum. It is most probable that a blow or fall sufficiently violent to produce this effect, will much injure the subjacent parts. To reduce this fracture, the patient must be laid on the opposite side, and the parts are to be retained together by compress moistened with oxycrate, and convenient bandage.

Fractured Humerus. It is extremely difficult to manage the upper arm when broken near either of its extremities: should the condyle be thrown into the bend of the arm, an ankylosis will almost inevitably follow. In fractures of this bone, extension should

be made with the arm in a bent position. In the simple fracture, the circular bandage is generally preferred; and the muscles of the lower arm must be kept in an easy, relaxed state, with the thumb upwards. When the bone is broken so near the upper joint as to render it difficult to fix a bandage, a compress dipped in the defensive before mentioned, may be applied round the part; the elbow must be supported, and the arm must be kept close to the side.

If complicated with a wound, or the bone be much broken, the ends must be adjusted as well as possible, and cloths applied wetted with Aq. Vegeto-min. or the like, together with the twelve-tailed bandage; taking care to keep the muscles in a relaxed and quiet state; and resting the arm on pillows. As soon as the callus begins to stiffen, or the tension is subsided, it will be absolutely necessary daily to move the arm at the elbow joint, as far as can be done without giving much pain; and now and then to vary its position; at least, not to suffer it to remain constantly bent.

This method was particularly observed in the case of a young man, who, by a fall from a tree, had the humerus fractured just above the elbow joint, and the exterior condyle quite separated and forced into the bend of the arm. The inflammation and tension continued more than a month, the biceps tendon was greatly on the stretch for some time longer, and the pulsations of the artery were uncommonly throbbing. At the end of the eighth week, the tension was chiefly down; and whenever an attempt was made to reverse the supine posture of the arm, to which it had been generally, though slightly confined, the condyle could be easily perceived to move together with the upper part of the radius. About the tenth week, the condyle began to unite with the humerus, and bore the application of pasteboard splints moistened with oxycrate, and a circular bandage;

bandage; and, in process of time, the limb was perfectly restored to its shape, use and strength. The customary means were used to abate inflammation, tumour, and general tension; which, for nine weeks, allowed of no other bandage or lodgment than the pillow.

Fractured Radius and Ulna. If only one of these bones be broken, the other will serve for direction and support. When the injury is in the radius, and near the wrist, it is difficult to retain the bone in its proper place, on account of the fractured part being strongly drawn towards the other bone, by the action of the pronator quadratus muscle. The pronator teres is also an obstacle, tending to throw the bone inwards, and by that means to prevent regular apposition.

A fractured ulna is much easier to be discovered than one of the radius, from its want of power to support the joint: both may be discovered, by a grating feel and noise, if the elbow be held firm, and the hand be moved outward and inward. In both the reduction and cure of either fractures, it will be proper to place the thumb upwards, to bend the arm, and to use splints that will reach from joint to joint.

When both bones are fractured, the hand is to be placed perpendicularly, and the extremities are to be brought together by due extension and compression. If the processus olecranon be broken, due extension will be necessary towards its reduction, and the arm should be kept in that position, by means of proper splints and bandage.

Fractured Wrist. The bones of the wrist are seldom broken as other bones are, but are liable to be crushed and much injured by heavy weights and violent blows. From their smallness and numbers, and on account of the ligaments and tendons which surround or lie contiguous to them, such fractures are difficult of cure. A regular extension, and sufficient
pressure,

pressure, are required towards replacing them, together with suitable bandage. Great inflammation and tension generally attend such injuries; the joint of the wrist too often becomes rigid and stiff, and sometimes abscess and caries are not to be prevented.

Fractured Metacarpal Bones. The bones of this part, being longer than the preceding, are much more easily to be reduced. The palm of the hand is afterwards to be placed flat over a piece of stiff paste-board, or thin board hollowed at the edge for the fingers to lodge easy on; the forward edge of which should not reach further than the second joint. A compress of tow or thin cloth should be applied between this broad splint and the hand, with proper bandage.

Fractured Finger and Thumb. When a finger is broken, a narrow bandage wound round that part together with the adjoining fingers, will be sufficient security. Splints, as well as bandage, will be found necessary towards the cure of a fractured thumb. In case the finger is much shattered, a deal of trouble and torture will be avoided, by taking it off at the joint above the injury.

Fractured Thigh. The thigh-bone, notwithstanding its size and strength, is very subject to this accident. When the neck of this bone is broken, it is difficult to manage it, on account of the great power and thickness of the muscles which cover it. It is to be distinguished from a luxation, by the acute pain felt in and about the joint when put in motion; the loose state of the limb, which will nearly admit of the foot being turned round; and by the grating of the bones on moving it. In such a case, a gentle and gradual extension is necessary, and the limb is to be kept in the extended state; the toe being fixed on a line with the knee and groin. A compress with convenient bandage should be applied, as soon as the parts

parts begin to stiffen; time and rest must complete the cure.

In a fracture of this kind, which happened a few years since, the whole limb was placed as near as possible to the above direct position, on two soft pillows; one of which was laid under the hip, and part of the thigh; and the other reached from a little above the ham, rather beyond the foot, with a sufficient compress to fill up the hollows under the ham and heel, and altogether confined with tape at proper distances. This fracture, with due caution and rest, did better than usual, and in less time; and the limb was scarcely shorter than the other. This patient being of a full habit, was bled twice during the symptomatic fever; he strictly attended to the position of the limb, and conformed to rule in every respect.

When the fracture happens towards the middle or lower end of this bone, after the general means have been used, it will be best to place the limb upon a pillow on its outermost side in the curved position, in order to moderate the consequent tension; but as soon as the swelling and tightness are subsided, the limb should be carefully and gradually brought down, and the toe, knee, and groin should be kept in a direct line with each other: it will also be prudent, as soon as the callus begins to stiffen, now and then to move the knee joint. This maxim ought to be put in practice with other joints, under similar circumstances.

Cloths, duly and repeatedly moistened with refrigerants, an eighteen or twelve tailed bandage, and two splints of sufficient length and breadth, are the necessary applications.

For the treatment of Compound Fractures of this part, vide the foregoing article, Of the Humerus.

Fractured Patella. When this bone is fractured transversely, the limb is ordered to be placed in an extended posture. The reduction of the two ends will

will be more easily effected, by relaxing the rectus cruris and other extensors; or, in other words, by bending the hip-joint. This fracture, after the tension is subsided, generally does best by giving a moderate action to the joint every day; the upper part being apt to recede, from the retractive power of the muscles, it is highly proper to place a compress just above the knee-pan, and to pass a roller above and below the knee. Instances are mentioned by the most respectable writers of the divided parts remaining near an inch distant from each other, with no great impediment to the common action of the limb.

If this bone be fractured longitudinally, the inflammatory symptoms require the chief attention; rest, and the customary applications of compresses dipped in Goulard's saturnine water, or oxycrate with sal ammoniac, and slight bandage, will be necessary.

Fractured Tibia and Fibula. When either of these bones are separately broken, which seldom happens to the former, the limb may be laid in either position, as each bone will serve to support the other; one splint, with proper bandage, will then be only necessary. When both bones are fractured, after due extension, it may be right to leave, for a time, the limb in a curved position; but as soon as the tension and inflammation are tolerably subsided, it had better be brought, by gentle means, to the extended posture. But in this case, unless the fracture be compound, or the tension be likely to be great, of which a tolerable judgement may be formed from the nature of the injury, no material objection can be made to placing it in the extended position from the very first. But should the fracture be oblique, to raise and support the heel, and to keep the toe in a direct line with the knee, will evidently tend to prevent the riding of the bone: and here it may not be amiss to remark, that if the latter circumstance
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be not properly attended to at first, it may be found a difficult task to bring them into regular apposition.

When the fibula or small bone is fractured not more than two inches from the ankle joint, it is mostly attended with a dislocation; to admit of which, the ligament must be violently stretched, if not torn. When the bone is forced through the integuments, and the reduction is difficult, it is sometimes necessary to enlarge the wound, in order to let in the protruding end; which, if much shattered or pointed, is sometimes removed by the saw. Even in the simple state, this accident will require great skill and management, both to reduce and retain the parts in such order, as will prevent lameness and deformity. Broad splints and moderate bandage will be necessary to guard the whole; and in the early stage, every means must be used to check and subdue inflammation.

Fractured Tarsus, Metatarsus, and Toes. These bones are to be reduced and secured, much after the manner of the bones of the wrist and upper extremities. Fractures in these parts, accompanied with a laceration, are subject to great inflammation and gangrene. A caries is frequently the consequence of such injuries, particularly in scrophulous habits. These fractures are too often succeeded by a stiffness, and want of proper motion in the neighbouring joint.

BLOOD-LETTING.

This is one of the most useful and nice operations in Surgery. It may be divided into three parts, Venal, Arterial, and Topical: the two former are most common. The parts on which venæsection is most frequently performed, are the veins in the arms, the jugulars, and those of the ankles, feet, and hands. Arteriotomy is principally confined to the

the temporal artery, and cupping with scarification, is either general or topical. Leeches are much used for the purpose of drawing blood from the smaller veins, and are mostly placed on, or near the part affected.

Bleeding in the Arm. The veins in the bend of the arm are commonly very conspicuous; yet sometimes lie so deep, and are so small, as to require much steadiness and judgement to open; under which circumstances, in despite of custom, it would be much better and safer to let blood in the hand, foot, neck, or any other part, where a vein that is safely situated, and of tolerable size, shall offer itself.

The number of veins which more conspicuously present themselves in the curvature of the arm, are three; the Cephalic, which lies on the upper part; the Basilic, on the lower part; and the Median, which is obliquely situated in the middle. A large artery, and the brachial nerve, generally lie under or on one side of the Basilic; and the tendon, or aponeurosis of the biceps muscle, between the Basilic and Median; sometimes more immediately under the latter. The Cephalic seldom lies so fair and steady as the others.

Previous to the operation, provide a fillet about an ell in length, and full two fingers in breadth; a small square compress of soft linen rag, with a bit of lint in the middle; a basin, or a proper number of small cups, to receive the blood; a basin with water, and a sponge, or towel; then fixing upon the most eligible vein, apply the ligature, moderately tight, about an inch above the elbow-joint, and fasten it with a slip-knot on the outside of the arm. To render the vein bolder, rub the arm well from the wrist upwards; make choice of a spear or broad-pointed lancet, according to the depth or fleetness of the vein; place it between the lips and teeth, with the blade so far removed from the handle, as to form an obtuse angle; then fixing the arm firm and extended

tended against your breast, grasping it with one hand, in such a manner as to be able to press the vein with the thumb, just below the part you mean to open, in order to keep the vein steady; examine carefully, by pressure with the middle or fore-finger of the other hand, with which you are to operate, the exact situation of the artery, nerve, or tendon; and, as it were, sound the depth of the vein: if free from hazard, take hold of the lancet with the fore-finger and thumb, about half way of the blade, and resting upon the other fingers, thrust the point into the vein; immediately upon its entrance therein, raise the point, by depressing its heel, and withdraw it.

If the stream be weak, or stops, slacken the ligature a little, and gently bend the arm for the purpose of relaxing the orifice; and further, give the patient a stick into his hand, with which he may support his arm, and at the same time, by turning it round, will accelerate the course of the blood through the orifice. The necessary quantity of blood being drawn, take off the ligature, cleanse the orifice with a clean wet sponge, and press the edges of it together, so as to exclude every particle of blood: apply the lint and compress over the wound, and press the thumb firmly thereon: having wiped the arm clean and dry, carry the bandage over the compress round the elbow, in the form of a figure of 8, leaving enough of it at each end to tie on the outside of the arm, above the elbow.

The bandage and compress are commonly removed on the following day; but if the latter should adhere to the lips of the orifice, it will be proper to continue them on a day or two longer. Some surgeons apply a piece of lytharge plaster over the lint, and some, only the rag, dry or moist: but let it be understood, that plaster will not agree with all, and that the principal obstacles to the healing are, a small particle of coagulum lodging between the
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edges of the orifice, too great motion of the arm after the operation, and the wound being soon after exposed to the external air.

Bleeding in the Hands, Feet, and Ankles. Two chief veins, with their several branches, run over the back part of the hand; the one named Splenica, which bends its course from the little finger, and the Cephalica, which runs between the thumb and forefinger.

It is customary, and mostly necessary, to place the hand for some time in warm water, and to rub it well at times, in order to make the veins more turgid, both before and after the ligature is made round the wrist. If the blood should not flow freely, the hand should be again put into the warm water, and be kept there till the proper quantity is discharged. Proceed afterwards as has been before directed.

The saphena and cephalic veins on the foot, or their most conspicuous branches, may be opened and treated after the same manner with those of the hand; tying the ligature tight above the ankle, and observing to fix upon the vein which is most turgid and free from tendon.

Bleeding in the foot is still practised in feminine obstructions; and the surgeon that does not comply in that point will inevitably incur the censure of the good women; whose opinions in medical matters, although generally founded on false grounds, and supported by prejudice, may as well be complied with in such trifles.

Bleeding in the External Jugulars. These veins lie deep in many subjects; and, to raise them to view, it is necessary to place a firm linen compress in the course of the vein, on the lower part of the neck, and to fix a neckcloth, handkerchief, or common ligature over it, and tie the two ends under the opposite arm-pit; or it may be held tight by an assistant. In some instances it has answered better, from applying the compress and bandage on the opposite side of the

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the neck to that on which the operation was to be performed. The bandage being fixed, the vein is to be pressed with the thumb, and the lancet passed just above it, in the manner before directed. The orifice should be made rather larger than on other parts.

In particular cases, blood is also drawn from the parts affected, or those which are contiguous thereto; as under the tongue, on the eye, hæmorrhoidal veins, &c.

ACCIDENTS FROM PHLEBOTOMY.

The principal accidents which occur from venæ-section are, thrombus and ecchymosis; occasioned by an effusion or diffusion of blood, from the vein into the cellular membrane; wounds of the subjacent artery, nerve, and tendon; and inflammation of the vein.

Thrombus and Ecchymosis. Sometimes in bleeding, the unavoidable protrusion of a small piece of fat, the change of posture in the arm, or the orifice being too small, will occasion the stream of blood to be impeded; and a portion of it will be forced between the skin and the cellular membrane, so as to raise a small tumour over the orifice in the vein, which is called *Thrombus*: and when the extravasated blood leaves a discolouration round the part, which at first assumes a blueish hue, then changes to a bruise-like appearance, it is called an *Ecchymosis*.

Under such circumstances, little blood can be expected to flow from the orifice; it will be better therefore to remove the ligature from that arm, and to repeat the operation in some other part. Such tumours, when small, require only pressure with the thumb; those of the larger kind may be dispersed by the application of compresses, wetted with a mixture of vinegar and brandy, and rather a tight bandage. If the tumour cannot be dispersed by such means, it will be necessary to let out its contents, and treat it as a common wound.

Wounded Artery. An injury of this kind in blood-letting may be ascertained by the blood rushing out in jerks with great force, notwithstanding it is strongly compressed, and by its florid colour. The means commonly used for the immediate relief of this accident are, tight pressure on the orifice, and in the course of the vessel up the arm, by firm compresses and strict bandage.

Mr. Benj. Bell, in his excellent system, condemns this practice, and observes that when the pressure is in so great degree as to stop the course of the blood through the artery, the circulation in the whole limb must be stopped; and that if the vein be compressed, the blood must be greatly obstructed in its return, and be more likely to force its way through the opening in the artery, into the cellular space around. The method which he recommends at first is, to take off all pressure from the veins; to evacuate as much blood as the patient can well bear the loss of; to retain the lips of the wound together, by means of strips of sticking plaster, without bandage; to keep the limb in the most easy posture, and the body cool; to prescribe low diet, gentle laxatives, and repeated bleedings, if requisite; and to enjoin rest. Under such management, he declares that the wound in the artery is much more likely to coalesce, than with the customary treatment by pressure and bandage.

The foregoing objections and treatment are principally argumentative, since it is well known that pressure and strict bandage have succeeded; but the objections do not make so forcibly against that degree of pressure which is just sufficient to restrain the efflux of blood from the puncture; which Heister and others have recommended from experience, and which was effected by firm compresses planted in the course of the artery, above and below the orifice, with another directly over it; together with suitable bandage, rest, and every necessary restraint.

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The latter means, however, were formerly used, upon the presumption that gangrene would inevitably follow an entire stoppage of the circulation through the main trunk of the femoral artery; whereas dissection and experience have proved the contrary. It may also be further remarked, that the success of both compression and ligature depends chiefly on the obliteration of the arterial canal, about the point where the vessel is injured. In the varicose swelling, which is particularly noticed under the article Aneurism, moderate pressure, at first, is likely to prove beneficial.

If, in accidents of this kind, the means prescribed should not prevent an increase of swelling, which too often happens to be the case, it must terminate in a tumour of the aneurismal kind, and be treated accordingly.

Wounded Nerve and Tendon. When the patient complains of exquisite pain in the part bled, at the moment of operating, it is most probable that the nerve is hurt: if the operation be soon succeeded by an obtuse pain, with frequent dartings, the subjacent tendon or aponeurosis is more likely to be the injured part.

Whenever such extraordinary symptoms are complained of, it will be proper to let the blood flow more copiously than was at first intended, from the vein that is opened, or from some other part, if necessary; and to enjoin the patient to keep himself as cool as possible, and the limb perfectly at rest; applying Goulard's saturnine water, or Mindererus's spirit, to the wound and adjacent parts; and administering a cooling purge. At other times inflammation and tension soon form, the pain increases, the lips of the wound grow hard and inflame, and in a short time comes on a serous discharge. It may continue thus two or three days, when every inflammatory symptom increases, and extends itself over the whole limb, accompanied with a strong sensa-

tion of burning heat, a dusky erysipelatous redness, and a tight quick pulse. Sometimes these symptoms are rapidly succeeded by twitchings of the tendons, convulsive affections, and a locked jaw; from which, death alone releases the unfortunate patient.

The late Mr. John Hunter was of opinion, that these fatal symptoms might be produced from a mere puncture of the vein, and that they are first brought on by an inflammation in the internal surface of the vein; which disease he declared that he had often traced in horses, that have died from bleeding, along the course of the vein even to the heart: and affirmed, that the same instances had occurred in the human frame. Notwithstanding which, the former opinion still prevails, viz. that every symptom proceeds from injury in the nerve or tendon.

If the symptoms of pain and inflammation be likely to increase, and fever rise, repeat the bleeding from some other vein, or by a number of leeches on or near the part affected, and keep the bowels lax. Cover the inflamed parts with doubled cloths moistened with saturnine applications, and give opiates at proper intervals.

Should these applications fail of effect, a total division of the parts injured will be necessary; to accomplish which, the tourniquet being properly applied, let a free and extensive transverse incision be made through the teguments; then gradually, and with the utmost caution, proceed with the knife and sponge, and narrowly inspect the parts, for the discovery of the punctured nerve or tendon, which lies contiguous to the vein, avoiding, if possible, the larger vessels and tendons. The injured part being divided, loosen the tourniquet, and carefully secure the wounded arteries by ligature. In prosecuting this business, the parts adjacent to the injured nerve or tendon are sometimes more particularly strictured; releasing which only gives great ease, and is sometimes

times sufficient to render further proceedings unnecessary.

The wound should be dressed with soft lint, and afterwards as in common; observing to keep the arm in the most easy posture during the inflamed state.

The following observations, if strictly attended to, will obviate all the foregoing mischiefs.

The situation of the artery, aponeurosis and nerve, is commonly under or near the basilic vein, sometimes nearer to the median; but the vein being not so strictly attached to the surrounding parts, may in some measure be cleared from all of them by twisting the wrist and elbow.

When the person who is to be bled is timid, grasp the arm firm, and guard the lancet well, by holding the blade rather nearer the point than usual.

Particular care should be taken not to dip the point of the lancet into the vein after its entrance, and rather to elevate it immediately before it is withdrawn.

The situation of the artery and tendon are easily to be felt, by pressure with the finger, and bending the elbow-joint; the one from its pulsation, the other from a tight cordy feel.

The station of the nerve is seldom to be perceived; sometimes, by a certain twist and bend of the arm before the ligature is fixed, it is to be felt like a slender thread. It commonly lies under, or parallel to, the inferior part of the vein; still, from its minuteness in comparison to the size of the vein, and its inferior station, there will be no risk of wounding it, provided the lancet be entered in the course of the vein, or with the least oblique direction towards its superior part. Those who accustom themselves to pass the lancet across the vein, are most likely to do hurt.

ARTERIOTOMY.

This operation may be performed much after the same manner as phlebotomy, except that the incision ought to be deeper, and always in an oblique direction. It is scarce ever performed in any part but the temples; where the arteries or their branches are easily perceptible to the touch, and may be readily and effectually compressed.

The patient is to be seated conveniently, with his head inclined against the light, and held steadily against the breast of an assistant. When the surgeon has clearly discovered the course of the artery, let him place his two fore-fingers, or fore-finger and thumb of the left hand, at a moderate distance from each other upon it; then dip the end of a strong lancet, not too broad-pointed, carefully between, observing to enlarge the incision, by elevating its point as it is withdrawn. If the blood should follow the lancet in a salient stream, and is of a fine florid colour, the artery is properly opened; otherwise the incision must be repeated till the vessel is rightly opened. Some surgeons first lay bare the artery with the edge of a lancet, or a small dissecting knife, especially when it is deep seated, and then make an opening into the vessel; others, without ceremony, divide it obliquely, or quite across, with a small incision-knife; the first method is to be preferred, as most dexterous, and least painful; the last, as most certain; which may be a matter of the greatest moment in urgent cases.

After the proper quantity of blood is drawn, the orifice and adjacent parts are to be wiped quite clean, dry lint is to be applied, and a small square compress, including a flat bit of lead, or farthing, or some such thing; another hard compress in the course of the artery, and a third over all; which may be firmly secured by the reversed or nodose bandage, and continued on about a week or ten days.

days, in which time the wound is commonly healed. Should the hæmorrhage be difficult to stop, a circumstance that under proper management seldom happens, the vessel may be secured by ligature.

Experience can testify the immediate good effects of this kind of blood-letting, in obstinate disorders of the head and eyes, in sanguineous apoplexies, violent concussions of the brain, &c.

TOPICAL BLOOD-LETTING.

Cupping and Scarification. This and leeches are the principal means used in local blood-letting. The first is performed after the following manner: take a very small piece of fine flax, or dip a little piece of grey paper into spirit of wine, set either of these on fire, and put it into the bottom of a cupping glass, the mouth of which being immediately applied to the part intended to be bled, will be firmly fixed thereto. After the glass has been thus stationed so as to raise the skin, let it be taken off again, which may be easily done by depressing one edge and forcing the other upward. The scarificator which contains twelve or sixteen small lancet-blades, fixed in a brass cubical box, with a steel spring ready set, is to be placed with the part where the openings are made for the blades to pass downwards, close upon the reddish swelled circle: let this instrument so placed be pressed down, and held firm by the fingers and thumb of each hand, on opposite sides; one thumb is then to be passed to the brass button, and to press upon it so strongly as to set loose the blades, which, in passing to the other side of the instrument so instantaneously, will form an equal number of regular small incisions, with little or no pain. This being done, fix the cupping glasses *as before directed*, exactly over the same circular part, and the blood will immediately begin to flow from the incisions, when the glass

is nearly full, remove it, and pour the blood into a basin; then sponge the part with warm water, and apply another glass, or the same wiped dry, if necessary.

In some cases five or six glasses have been employed at one and the same time. Should the blood flow too slowly, new incisions may be made to the former. When the necessary quantity of blood is drawn, carefully sponge the little wounds with warm water, and apply a piece of soft linen, or a pledgit of lint, dipped in milk or cream, over them.

Cupping and scarification is practised successfully on the head, neck and shoulders, occiput, behind the ears, on the back, loins, legs, thighs, arms, and wherever the form of the part will admit; for the relief of the head, eyes, and ears, hæmorrhage in the nose, the pleurisy and other fixed pains, topically or otherwise.

Dry-cupping, that is, without scarification, is said to be of service in some local disorders; but the principal circumstance in which it is likely to be so is, promoting suppuration, by fixing the glass upon the part affected.

Blood-letting by Leeches. Naturalists call the common leech an aquatic insect. It has the figure of a worm, and is about the length of a man's little finger; it has a small head, a black skin edged on each side with a yellow line, and its belly is rather reddish; there are also a few yellowish spots on its back. It is said to produce its young alive, and one at a time, in the month of July. The common blood-drawing leech may be readily distinguished from the horse-leech; the latter being larger, and having a smooth glossy skin; its back is black, spotted with grey, its belly is also spotted with the same colour, and it has a blueish hue. Vide, Brooke's Natur. Hist. vol. iv.

Leeches may be used with advantage where the
lancet

lancet and cupping are inadmissible. The mode of using them is too generally known to need much precision in its description. There is sometimes a difficulty in fixing them, which may be removed by letting them crawl for a minute or two on a dry cloth or board, or by moistening the spot on which they are to be fixed, with milk, cream, or blood, and covering it with the mouth of a common wine glass. They generally suck till they are full, and drop off; after which, the discharge, if required, may be promoted, by the repeated application of sponge and warm water. They are frequently and repeatedly applied with success, to painful tumours about the joints, and on membranous parts.

If after sucking sufficiently, they are not easily to be separated, a grain of common salt may be dropped on their backs, and they very soon quit their hold. They should be kept in clean water a few days before they are used. Some cruelly cut their tails off whilst they are sucking; by which means the blood flows through them, and they are said to suck a longer time, but they die soon after; whereas those that are treated more humanely, may be returned into the glass, and reserved for future use.

Bleeding by simple Scarification. This operation may be performed with the fine edge of a lancet, or by lightly brushing the part with the beards of barley; which latter process is principally confined to some obstinate inflammations of the tunica conjunctiva of the eye. The operation with the lancet may be attended with advantage; but that of brushing the eye, as it is called by itinerants, may make bad worse. When the lancet is used, the superior lid should be held up by an assistant, and the inferior is to be pressed down by the operator; scarifications may then be made through the most turgid vessels. A few eminent men have, in most æras, declared themselves advocates for this operation, in particular

lar obstinate cases; still it is very seldom performed.

Bleeding also at the corner of the eyes and eyelids was some years ago the boast of a famous oculist: but time and experience do not seem to have favoured this practice; for it is not so much as thought of by the present practitioners.

ISSUES *and* SETONS.

Issues are small artificial ulcers, made in several parts of the body, for preserving and recovering health. The places where they are commonly formed are, the crown of the head, the nape of the neck, behind the ears, at the insertion of the deltoid muscle, and on the thighs and legs, in the hollow just above and below the inside of the knee.

Issues are commonly made by incision or caustic. The former is the most easy and ready method, and is done in fat habits, by plunging the point of a strong bladed lancet through the cutis, after the manner of bleeding, then bearing it forward, upward, and outward, so as to make the orifice large enough to hold a pea or horse-bean: or in thin habits, by pinching up the skin with the fore-finger and thumb of the surgeon and an assistant; then darting the point of the lancet through the spot required in a transverse direction, and bearing the blade upward and outward. After introducing the pea, a proper plaster compress, and bandage, are to be applied. The first mode of incision is most eligible, when the skin is tight and full; the last in thin habits, when it is loose and lies close to the tendinous fascia which covers the muscles.

The mode of using the caustic for this and other purposes, may be understood from what is already said under the article, *Maturation*. The size of the aperture in the plaster ought to be in proportion to the number of peas which are to be employed in
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keeping the part open, making a proper allowance for the caustic spreading beyond the intended limits. This method is commonly used where large discharges are thought necessary: as in the side, for a pleuritic pain, or in phthisis; or between the shoulders, in complaints of the head, &c.

Those who are too timid to undergo either of these operations for forming an issue, draw them, as it is vulgarly called; which is done by placing a pepper-corn properly enveloped with blistering salve, upon the part where the opening is to be made, and confining it there with a piece of sticking-plaster, a compress of linen cloth, with a small piece of money in its nearest fold, and rather a tight bandage: by which means, about the second day, an opening will be made sufficient to introduce a small pea; this should also be kept in by the same pressure, daily increasing the size of the pea till the issue is perfectly formed.

This sore must be dressed once or twice a day, according to the nature and quantity of the discharge: putting in a horse-bean, or one or more fresh peas; and covering it with plaster, compress and a slip or other kind of bandage.

When the opening inclines to fungus or rejects the pea, it may be brought into a proper state by blue vitriol, or by introducing a pea dipped in an aqueous solution of it; also, by burnt alum, or lunar caustic. Bitter oranges, peas smeared with equal parts of blistering salve and cerate, or slightly dusted with powdered cantharides, will be occasionally necessary to increase the discharge.

Issue on the Head. Some physicians place great confidence in issues formed in the scalp, at or near the part where the coronal and sagittal suture meet, particularly in vertigo, coma, &c. and in disorders of the eyes and ears. This operation was formerly done by the actual cautery, afterwards by the caustic, and is now performed with the knife; it is by some

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transferred more to the back part of the head, by cutting out a piece of the scalp, about the size of a shilling or half-crown, down to the periosteum, and keeping it open with a piece of gentian root, with peas, or horse-beans. The division of the vessels at this point, is supposed to be of particular use. It may be found necessary in the latter opening, to dress for the first time with a plenty of dry lint, compress, and bandage, in order to prevent extraordinary hæmorrhage; and as soon as the opening can be freed, to apply the necessary means for keeping the part open, and promoting the discharge. This seems to be one of those consequential processes, which may at least answer the purpose of renewing hope in a desponding patient. No satisfactory reason has been given why the discharge from issues made by caustic, behind the ears, between the shoulders, or from a seton in the nape in the neck, should not be equally efficacious; or why opening a vein, or dividing the temporal artery, should not answer every other intention as well.

Setons are more efficacious than issues, as they occupy more raw surface, consequently yield a greater discharge. They are chiefly made in the nape of the neck, and in the side.

There are two modes of performing this business; one by deeply pinching up the skin as before directed, and thrusting through it a broad-bladed needle, formed for this purpose, and armed with several small threads of silk, with thread, or cotton-wick loosely twisted: the other is done by taking up the skin as before directed, and passing the end of a double-edged scalpel, or a stout lancet through it, then passing an eye-probe, properly armed, through the opening. This method is generally preferred, as it admits of making a larger aperture than that with the needle.

The ligature should be of a tolerable length, and of an adequate thickness to the size of the opening:
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from twenty to thirty threads of middle-sized silk loosely twisted. The ligature should be occasionally smeared with a light digestive, about the length of the distance between the two openings, and clean wiped occasionally. When the whole length of the skin is nearly exhausted, a clean skain must be introduced: a plaster, compress, and convenient bandage are to be applied over it, taking care to carry the spare part of the silk above the upper edge of the plaster, that it might be less apt to drag and to be daubed.

The use of artificial outlets is daily experienced, more especially in scorbutic and cachectic habits; but in such kind of constitutions, one common issue only can have but little effect.

Complaints in the head and eyes have been often relieved by the discharge from a seton: obstinate pains in the side, attended with a bad cough, have also been benefited by it.

Actual and Potential Caution.

Actual Caution. Cautionization was once an universal remedy. The irons of various sizes and figures, used on different parts and occasions, formed a considerable part of the surgeon's apparatus, and are accurately described, and favourably mentioned by some eminent writers. They were used for removing scirrhus tumours, cancers, excrescences, carbuncles, and mortified parts; to remove caries, to make issues, &c. and to suppress hæmorrhage: to cure gutta serena, apoplexies, epilepsies, sciatica, &c. and to remove every fixed pain. A celebrated foreigner, not long since, was famed for applying the actual caution in various diseases. But so it happens with this, as with every other universal remedy, it is nearly sunk into disuse; being chiefly employed in curing the tooth-ache, and suppressing hæ-

hæmorrhage from vessels which cannot be secured with the assistance of the needle or tenaculum.

Burning with Moxa. This species of cauterization is esteemed as grand a catholicon in China and Japan, as that with the hot iron was not long ago in Europe.

This operation is performed by means of cones made of moxa, a species of Indian mugwort; they are about an inch in length, and the same in diameter at the base; are slightly fixed upon the part with a gummy solution, then set fire to at the top, and suffered to burn down to the skin, and form an eschar. The after-treatment is like that with the caustic.

Not more than three at one time were applied to persons with weak constitutions, but ten, and even twenty, are said to have been fixed upon the limb of a strong man. Much relief has been found from this mode of cauterizing in deep-seated, obstinate, rheumatic pains, especially those seated about the hip-joint. The cones were made with cotton closely put together.

The Arabians, Persians, Mahometans, and Indians, on this side the Ganges, use cotton for this purpose; the Gentoos, and Indians beyond the Ganges, are said to use the pith of the bull-rush imbrued with the oil of sesame; and the Laplanders apply a sort of mushroom.

Potential Cauteries. Caustic medicines when applied to a part, act slower, perhaps not with less pain in some habits, than the hot iron, but produce the same effect. They have various degrees of strength; the most powerful are what were lately called lapis infernalis and causticum commune fortius: the milder sort are the solution of quick-silver in aqua fortis, the other common caustic, and the different kind of cathartics.

AMPUTATION IN GENERAL.

To separate a limb from the body is considered as one of the most severe operations; yet it is sometimes absolutely necessary for the preservation of life. From the successive inventions of the tourniquet, ligature, double incision, and healing by the first intension, the operation is much less dangerous in its consequences than formerly; and from the improved state of surgery, particularly with regard to the treatment of compound fractures, it is become less needful.

The principal occasions on which the surgeon's aid is thus required, are, when part of the limb is so far destroyed by mortification that it cannot be restored; when the bones, ligaments, and blood-vessels are so terribly injured as not to leave sufficient powers for recovering the part; and when a joint or bone is so greatly diseased, as from pain, absorption or discharge, must prove fatal.

When the heads of bones and the surrounding parts are greatly comminuted and torn, it is perhaps more eligible for the safety of the patient to amputate, than to endeavour to save the limb; yet there have been instances where the shattered heads of bones have been taken off and the limb saved: but the consequent inflammation, abscesses, great discharge, length of confinement, and other painful incidents, amongst which langour and despondency were by no means the least, render the cure a dangerous and distressful purchase. Yet, let it be understood, that, in desperate cases, no prudent surgeon will either attempt to delay or perform an operation of such moment, without first consulting with the most skilful practitioners in his neighbourhood.

It is also to be observed, that when inflammation and tumour are risen, and gangrene is threatened, whether

whether the latter symptom be occasioned from age, constitution, or accident, it has been judged necessary, not only to wait till, by the assistance of internal, as well as external means, the line of separation is formed, but also till the separation is far advanced, and new flesh shews the operation to be perfectly warrantable: Notwithstanding which injunction, some able men wait no longer in most cases than till the line of separation is fairly formed, hoping by such means to free the system from mischiefs attending the absorption of the gangrenous matter, taking care to begin the first incision a sufficient height from the diseased part. Age, and a bad constitution, are undoubted objections to operation at the earlier period; but youth, and accidental causes, may admit of less delay.

The apparatus necessary upon such occasions, consists of the following particulars: Petit's screw-tourniquets, a slip of rag or tape, near an inch broad, to fix round the part, as a mark for the circular-limit of the first incision; a knife straight or curved, as best suits the hand of the operator; the catlin, or double-edged scalpel, for dividing the interosseal flesh and ligament between the ulna and radius, or the tibia and fibula; a retractor, made with leather or strong linen cloth, to draw the muscles back with, in order that the saw may be set on as far back as possible; a saw, a tenaculum, or hook-like instrument, to draw the ends of the arteries out with, and ligatures for securing them; some crooked needles, flat and double-edged only, large and middle sized, properly armed with strong ligatures; a flannel or cotton roller, for making a circular bandage near the end of the stump, to prevent the retraction of the teguments; scraped lint, slips of linen rag spread with adhesive plaster, with which the opposite edges of the wound are to be kept together; a soft pledget of tow spread thin, with a mild cerate, or some emollient ointment; a compress

compreſs made with fine tow, a croſs-cloth, or thin linen night cap, to inveſt the ſtump with, and a ſhort roller to confine the cap with at its upper part.

If a lower limb is to be taken off, it will be proper to lay the patient on a table, about two feet ſix inches high; if an arm, he is to be fixed on a chair of convenient height. Two ordinary aſſiſtants will be neceſſary to keep the head, body, and limbs ſecure and fixed, and two perſons, of ſufficient ſkill, ſhould hold the condemned limb; one above the part to manage the tourniquet, the other to ſupport the inferior part of the limb; a fifth ſhould be ready to hand the inſtruments when called for.

The tourniquet is to be fixed on the upper limb, above the part to be operated upon; if on the thigh or arm, a compreſs ſhould be placed under the ligature, in the courſe of the main artery, to aſſiſt in ſtopping the circulation; in the mean time the operator may fix the circular tape for the direction of the knife, but ſkilful practitioners need no ſuch aid.

The tourniquet being properly tightened, and the limb held firm in a regular direction, the firſt incision is to be made at the inferior part of the linen roller or tape, through the ſkin and adipole membrane, down to the muſcles only; having ſet on the heel of the knife far under the limb, and the point towards the upper part, ſo as with one ſweep to form two thirds of the circle; the wound ſhould then be continued by beginning at the upper part of the incision, on the upper or further ſide, and finiſhing in one circular line. Having removed the tape, the cellular attachments are to be divided; then the upper aſſiſtant is to draw back the integuments with both hands, as far as poſſible; after which the ſecond incision muſt be made cloſe to the edge of the retracted ſkin, perpendicularly through the muſcles and periosteum down to the bone. If in the leg or arm, the interoſſeal parts are to be

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divided with the point and edge of the knife or catlin, in a line with the last incision; and before the saw is applied, it will be best to fix the retractor, by means of which the whole of the flesh above the incision and separation, may be more forcibly held back than can be done with the hands of the assistant, and the saw may be set on greatly to the future advantage of the stump.

In the more modern mode of performing the operation, it has been usual to dissect up the skin, in order to preserve a greater portion of it, particularly in the amputation of the leg, or lower arm, in either of which cases it is thought necessary to separate it about an inch from the superior edge, and to turn it back all around, for fear of wounding it in making the incision through the muscles. It is also a maxim with some eminent practitioners, for the sake of forming a good stump in both leg and thigh, previous to dividing the bone, to separate the muscles from the bone about an inch upwards; this may be readily done, by carrying the point of the common amputating knife between them, freely round the limb, by which means the retractor may be used to much greater advantage. The periosteum should be divided by *one turn* of the knife, placed close to the retractor, for the reception of the saw; since exfoliation is not unlikely to be the consequence of *scraping off* that membrane.

The saw should be gently entered at first; and in the leg or lower arm, must be so directed as to work upon both bones at once, which cannot be done conveniently without standing on the inside of the limb; if not so, the bones, the fibula particularly, will be disagreeably splintered. Whilst the operator is using the saw, the lower part of the limb should be held as steady as possible, rather a little depressed, so as to give more room for the instrument to work; about the end of this operation, care must be taken fully to support the limb against its

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own weight, otherwise the bone will be inevitably snapped off, and leave a troublesome point or splinter, which ought to be immediately removed with the nippers.

The next step is to secure the vessels, a business that requires the utmost care and circumspection: the most certain and ready way of doing which in the larger vessels, particularly when they retract much, is, with the needle and ligature, by passing it nearly round the extremities of each artery, including as small a portion of the adjacent muscles as possible, and inclosing the whole with the surgeon's knot drawn perfectly tight.

Rational objections are certainly made to this mode of tying the arteries, the principal of which is, that by including the nerve and parts of the muscles, the painful spasms, which are too apt to occur from the division of the parts alone, are likely to be increased. On which account, the method of drawing out the ends of the arteries, and endeavour to tie them without the intervention of either nerve or muscle, has been brought forward, by means of an instrument much better adapted to the purpose than what was formerly used, the forceps; still it is often found necessary, after repeated and tedious attempts with the tenaculum, to fly to the needle and ligature, particularly when the mouth of the vessel is much retracted; for which reason, needles properly armed, should always be in readiness.

To discover the orifice of each vessel, the surface should be spunged as free from blood as possible; immediately after doing which, the assistant should occasionally loosen the tourniquet, which, when set at a proper pitch, may be done by a half turn of the screw, and as quickly recovered again. The large vessels being secured, either with the tenaculum or needle, the operator should proceed to secure every smaller vessel that appears to leak, and this sometimes is more readily and securely done

by catching the vessel's mouth with the tenaculum, and passing a small needle and ligature round it, than by forming the noose. A large stump below the knee has often required six or eight stitches. Care should be taken to leave the ends of the ligatures long enough to hang out at the edges of the wound, in the manner already described under article, Wounds.

If the patient be rather faint, after the larger vessels are secured, it will be necessary to loosen the tourniquet, and to sponge the surface with warm water, in order to invite hæmorrhage before the stump is closed up; by which means, and at the same time giving the patient a little wine, or wine and water, a lurking vessel has been detected, which might have been the source of much pain and trouble; every blood-pass therefore should be thoroughly explored, for fear also of a material interruption to healing by the first intention.

The blood vessels being perfectly secured, and the stump well sponged with warm water, the next business is, to bear the skin as forward as possible over the stump, and retain it so by means of a circular roller, made of fine Welsh flannel, which is to be bound gently round the limb, and should never be omitted on any pretence whatsoever, first fixing it round the waist, or above the superior joint, and winding it down to the end of the stump. The ends of the divided muscles, and the edges of the skin, are then to be placed in regular order, and to be retained so by long slips of adhesive plaster; the covering dressings then to be applied are soft lint, spread with a mild cerate, and a pledgit of fine tow over it; a thin compress of fine rag, with a cross-cloth, and a very slight retentive bandage. A thin linen night-cap turned over the dressings, and slightly fastened with tape at the upper part, is preferable.

The cross-stitch has been used for the same retentive

tentive purpose in amputations of the thigh, breast, &c. but it generally occasioned much pain without answering the intent.

Should the part burst open, and the stump become raw, which is seldom the case except in a very diseased habit, or from improper management, it must be treated in the same manner as other raw surfaces, with dry lint in the middle, and slips of rag or lint, spread with white cerate, round the edges. When the subject is greatly reduced, or the blood in a loose state, an oozing would sometimes continue from the smaller vessels, to check which, Dr. Kirkland orders the surface to be dusted with fine wheat flour and starch, or a mixture of starch and gum arabic finely powdered, and lint enveloped with the same powder: these, repeatedly applied with gentle astringent lotions, in conjunction with bark and vitriol internally, were extremely serviceable in weak emaciated habits, should the surface of the stump, by some means or other, become exposed.

It will be both prudent and necessary to keep a strict watch over the patient for two or three nights, and that the assistant should continue gentle pressure with the hand against the end of the stump, to resist the violence of the spasms, and to be the more readily apprized of hæmorrhage. The tourniquet ought also to be kept upon the limb so loose as not to restrain the circulation, yet so as to admit of being instantaneously tightened in case of hæmorrhage; the manner of doing which should be explained to every one that attends upon the patient.

If but little blood has been lost during the operation, and the patient be plethoric, it may be proper to take some from the arm, and every probable means for preventing or checking the symptomatic fever should be pursued. The rest of the after-treatment must be managed according to the state

of the constitution, the quantity of the discharge, and the further directions given under the article of Wounds in General, or under the following particulars.

AMPUTATION IN PARTICULAR.

After the foregoing general account of performing the operation, it will be proper to remark some particularities which each part is subject to in its performance, beginning with the extremities.

Amputation of the Fingers and Toes. These parts are most commonly taken off at the first or second joint above the injury. A common scalpel is the fittest instrument for the purpose, and the first incision should be made rather below the joint, to preserve the skin for its better healing: the teguments are then to be retracted and assisted back by a slight dissection around; the lateral ligament may then be divided near to the joint, which being dislocated, will point out the further means for a regular separation. When amputation is required at the metacarpal or metatarsal joint, it may be more readily performed by making the incision rather longitudinally on the inside, previous to the circular incision.

A ligature or two will be sometimes necessary after amputating, at the articulation; and the first dressings are lint, cross-cloth, and a narrow roller.

Fingers and toes that have been cut through accidentally with a sharp instrument, have been known to unite by being regularly and immediately placed together, and retained so by bandage.

Supernumerary, and misshapen fingers and toes, should be taken off with the scalpel and spring saw in adults, but with infants, the bone may be easily divided with the scalpel, or a stout pair of scissors; sometimes these appendages have no bone.

Of the Metatarsal and Metacarpal Bones. If a part only of these bones be carious, it may be adviseable to
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preserve the rest by removing no more than what is diseased. The wound in such case often heals kindly, and the remainder of the foot may be of great use.

Of the Hand and Lower Arm. These operations, as well as the foregoing, are said to have been performed with the chissel and mallet; but such uncouth means are justly discarded. The amputation of the hand is now generally performed at a moderate distance from the wrist joint, yet some prefer taking it off at the joint when that part is free from disease or injury. The particular circumstances to be attended to in operating upon the lower arm, are, to save as much of the limb as possible; to divide the flesh and ligament between the ulna and radius with the catlin, in a line with the second incision, and to set on the saw in such a manner as shall work upon both bones at once.

Some surgeons have been so bold as to confide in compress and bandage, for stopping the hæmorrhage after this operation; but the practice is surely unwarrantable, when the vessels may be so readily secured with the tenaculum, or needle and ligature.

Of the Upper Arm and the Thigh. The operation in these parts is to be performed after the general method, always observing to save as much of the limb as the nature of the disorder will admit; and that the higher it is amputated, the more subject it is likely to be to violent spasms, hæmorrhage, and profuse discharge; consequently more dangerous in its event. The tourniquet should be particularly attended to, at and after operating on either of these parts, as a sudden gush from such large arteries might be productive of disagreeable consequences in very weak and debilitated constitutions.

The cross-stitch is considered in the present practice to be a painful and useless mode of approximation, therefore commonly rejected. The bandage for preventing the retraction of the teguments and

muscles, is of much more consequence, and ought on no pretence to be omitted. It is generally fastened round the waist or shoulders, previous to the operation, and is gradually carried down the limb, near to the end of the stump. When managed with moderate tightness, it serves also to abate the impetus of the circulation, and to prevent the formation of abscesses.

Mr. Allanson of Liverpool, who has paid great attention to the subject of amputation, has pointed out a new mode of operating, and has practised it with remarkable success. It has been principally performed above the knee, and the following are its chief particularities :

After having finished the first circular incision, and separated the cellular attachments, the edge of the knife is applied upon the inner edge of the vastus internus muscle, and at one stroke the muscles are cut obliquely through, upwards as to the limb, and down to the bone, so as to lay the bone bare, about two or three fingers breadth higher than usual in the common circular incision. The operator then draws the knife towards him, so that its point may rest upon the bone, still keeping the same oblique line, that the muscles may be divided all round the limb in that direction, by a proper turn of the knife ; during which, the point is kept in contact with, and revolves round, the bone. Mr. Allanson observes, that the more muscular substance there is saved, by fully giving the oblique direction, the better. The directions for using the retractor, securing the arteries, and applying the circular welfh flannel roller, are similar to the present customary method ; the other principal difference is, placing the skin and muscles over the bone in such a direction, as that the wound shall appear only in a line with the angles at each side ; from which points the ligatures are to be left out, as their nearness to either may be most convenient. He uses a knife with a double edge.

Notwithstanding the unparalleled success of the ingenious inventor, as mentioned in his publication of 1779, viz. thirty five cases, which promiscuously occurred in the Liverpool infirmary, without the loss of one patient, and the speediness of the cure in each, very few exceeding one month; the method here described is very little attended to. For further particulars, vide Mr. Allanson's pamphlet on amputation, in which the reader will find many useful observations.

Of the Arm at the Articulation with the Scapula. It is much better for the patient, under this operation, to be in a recumbent than a sitting posture. It has been several times performed with success, and is necessary to the life of the patient, when the arm is so much injured or diseased as not to admit of being taken off below the joint. The leading principles in its performance are, to preserve the skin as much as possible, to secure the main artery and vein, and to guard against wounding them after they have been secured. It is directed to be done after the following manner :

Let the patient be properly secured on a table, with the shoulder brought over the edge of it; then make the first incision through the skin, and adipose membrane, beginning about two inches below the joint, at the upper part of the shoulder, and carrying it across the pectoral muscle down to the armpit; then turning the knife with the edge upwards, divide that muscle and part of the deltoide, in order to expose the vessels; which may be more easily done, by bearing the arm backwards; after which, with a needle and ligature made of five or six threads, tie both artery and vein; and being convinced by narrow inspection, and the absolute loss of pulse in the wrist, that they are perfectly secured, carefully pursue the circular incision through the joint; cutting first into that part of the bursal ligament which is nearest to the axilla; and in the round, be sufficiently

ciently aware of the projection of the processus acromion, and coracoides; then raising the arm, divide the head of the biceps muscle, and the ligament at the upper part; lift the head of the bone from the socket, and carefully dissect it away; preserving the skin and teguments, and avoiding the vessels above the ligature. After having secured the arterial branches, and left the ligature a proper length at the most convenient parts of the wound, sponge it clean with warm water, then lay down the teguments as regularly as possible over the socket, and retain them so with slips of plaster across the edges; dress with lint spread with soft cerate, a pledgit of soft tow, and compress as usual, and wind over all a welfh flannel bandage.

This operation may be particularly necessary when the joint is carious, or after great injury by gunshot or other violence on the upper part of the humerus, together with the joint. Its advantages were evident in cases of that nature during the last two destructive wars. Were an instrument once to be so happily contrived, as to afford a firm and sufficient compressure on the subclavian artery in its passage over the first rib, a painful part of the operation might be safely omitted, and there can be no doubt that it would be performed as often as required. Mr. Benjamin Bell has confidently recommended a cushion or compress to be held firmly by the hand of an assistant in the course of that artery; yet surely no prudent surgeon would choose to rely upon so unsteady a mode of pressure. There certainly can be little occasion, as that gentleman observes, to divide the operation in the manner here described, and practised by the late Mr. Blomfield, provided a sure and safe compressive instrument were formed for stopping the circulation, at the beforementioned point of the artery.

Of the Leg. In this operation the patient should be laid on a table of convenient height. The tourniquet

niquet is to be fixed with the cushion in the course of the main artery, three or four inches above the knee, and the first incision is commonly made about five inches below the patella; in doing which, it is lately recommended to direct the knife in such a manner, as to make these incisions rather lower at the calf than at any other part, by way of allowance for future excess of contraction in those muscles; and to prevent irregularity in the cicatrix. The cellular attachments should be separated and preserved as much as possible, particularly on the fore part of the leg; and the teguments, thus dissected up, should be turned back all around, before the incision is made through the muscles. The retractor must be used in this operation, as being the most powerful means for keeping back the skin, and serving to guard the soft parts against the saw. The saw is to be applied on the outside of the leg, for the sake of passing it through both bones at once, and the assistant must humour its progress; at first, by slightly depressing the limb; afterwards, by firmly supporting it, for fear of breaking it off abruptly, and leaving an uneven surface on the divided end of the bone.

It has been long customary to amputate at the distance from the knee before directed, even when the disease requiring the operation was seated in the foot; but when circumstances will admit, nearer the ankle, about nine inches from the knee-joint, is to be preferred; in doing which it will be proper to begin the first incision an inch lower than where the bone is to be sawed through, and to separate the cellular membrane close to the periosteum, for the purpose of getting skin enough to cover the surface of the stump. The operation at this part is easier and safer than just below the knee, and will afford greater convenience afterwards to the patient, from the aid of a leathern machine, and retaining the power of bending the knee.

THE FLAP OPERATION.

The flap operation is of longer date than it has been generally supposed to be. It was particularly described and performed by Loudham and Young, two surgeons of repute, in the year 1679; by Sabourin, of Geneva, about the same time; and by Verduyn in 1696; also by a Dutch surgeon or two about the beginning of this century. It was warmly recommended by Garengeot in his *Traité des Operations de Chirurgie*, published in 1731. It was also successfully performed on the arm by Ruysch; notwithstanding which, and the success of more modern surgeons, the common mode of operating prevailed, and the new practice has been relinquished even by its principal promoters.

This operation was brought forward in consequence of the inconveniences arising from the incision being made at once perpendicularly through the skin and muscles, down to the bone; which was the occasion of the muscles retracting, the bone protruding, and of the cure being so tedious as to prove highly injurious to the patient's constitution. It has been performed on various parts, principally on the thigh and leg, and was lately revived above the ankle: but the following improvements in amputation having taken place, viz. double incision, dissecting up the teguments, preserving the cellular membrane in parts thinly covered, separating the muscles from the periosteum after the second incision, and healing by the first and second natural process, have rendered this mode of operation nearly useless.

The manner in which it has been directed on the thigh, is as follows: The teguments being drawn up tight by an assistant, the whole extent of the flap is to be marked out with ink; from the base of
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which to the rounded end may be from three to four inches in length, and its breadth in proportion to the probable width of the stump. These limits being properly adjusted, the operator, standing on the outside of the limb, enters a sharp-pointed, double-edged knife, at the outward base of the mark, and pushes it through the teguments, close to the bone, in a line for the mark on the opposite side; then bears the edge along the line drawn on each side of the thigh, raising it upwards towards the *end* of the flap, which, for the better union with the under section, should be rounded off. The flap being held up by the assistant, an incision is to be made from underneath, through the other part of the integuments and muscles, at about an inch below the place where the bone is to be sawed; and the muscles are to be separated from the bone up to that part, with the point of the knife in the round. The retractor and the saw are then to be used as in common; and after having fully secured the arteries with ligatures long enough to hang out at the edge of the wound, the flap is to be spunged clean, placed regularly over the stump, secured with three or four interrupted sutures, and dressed with a pledget of cerate, soft tow, cross cloth, and proper bandage. On the third or fourth day the sutures are to be removed, and the dressings to be renewed, and the open parts are to be held together with slips of sticking-plaster.

Practitioners thought it best at first to dress the flap separately, and to place soft lint between that and the stump for several days, then to lay the raw surfaces down regularly close together, confine the edges with sticking-plaster, and to apply the usual dressings with proper bandage.

The other parts of the limbs were also operated upon on the same principles:

DISORDERS OF PARTICULAR PARTS.

INJURIES OF THE HEAD.

Fissures, Depressions and Fractures of the Cranium. These are sometimes to be suspected, from the vehemence of symptoms which usually attend those injuries, after blows or falls, although free from wound, or external appearances. Bleeding at the ears, stupor, and loss of voluntary motion, are strong indications of extraordinary hurt being done to the cranium. In every such case, scalping and trepanning are positively ordered; in short, whoever deviates from this given rule, subjects himself to the most severe censure. The operation is even recommended by great and respectable authorities, in violent blows on the head, unaccompanied with either fracture, fissure, or depression; with a view of giving vent to any extravasated blood or fluid, that may be supposed to lie between the cranium and the dura mater.

Notwithstanding which, some gentlemen of eminence in the profession, who have not strictly conformed to the written process, are able to testify, that many persons, who have received the most violent injuries on the cranium, have been perfectly recovered by the free use of the lancet and antiphlogistic treatment only. An experienced country practitioner and a bold operator has several times disobeyed this absolute injunction, and has it in his power to produce living testimonies of his success, which would stagger the faith of the warmest advocate for the use of the trepan.

The author of this publication pleads guilty to the charge in several instances of fractured skulls, all of which did well. One was in the left parietal bone, with moderate symptoms, who recovered with no other operation than removing the bruised
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and jagged part of the scalp down to the bone. Bleeding twice, and Dover's powder, after a previous immersion in the warm bath, as prescribed by the late ingenious Mr. Bromfield; afterwards, nitrous medicines, laxatives, and enemas, with slender diet and diluents, were administered.

Another was a fracture on the posterior and inferior part of the os temporis, caused by a violent blow from the beam of a malt-mill; in which a loose piece of the squamose part of the bone, not so large as the thumb nail, was removed with the forceps. It may be remarked, that this patient was totally deprived of his senses and voluntary motion till the twelfth day, and that no one was present at the time of his receiving the blow; also, that no external indications of injury could be perceived on the side which was fractured: in fact, the skin on the opposite side of the head being slightly rased, induced every one present to suppose that the principal hurt was in that part; but upon stricter examination, and observing a much greater degree of agitation and groaning in the patient when violent pressure was applied to the unsuspected side of the head, than from an equal trial on the opposite part, it was determined to search there for the injury; and the event proved the propriety of doing so.

The third was a fracture in the os frontis, just above the orbit of the eye, wherein no very alarming symptoms appeared.

The other two instances were on the frontal and the left parietal bone; both which were treated after the same way, and did perfectly well.

Two other cases of fractures in the cranium also came under his immediate care and management; in one of which, a great part of the occipital bone was removed, with the assistance of the trephine, the injury having been so violent as to force three pieces in upon the dura mater. The patient was truly athletic, and the symptoms were highly inflammatory;

tory; he was bled three times, had glysters repeatedly, and took the diaphoretic drops with a cool regimen. The other instance was a fracture and slight depression on the parietal bone, with moderate symptoms. Twelve ounces of blood were drawn from the arm soon after the accident, and one perforation was made which discovered the dura mater to be quite pale and found. The first of these two instances did well; the last grew bad in a few hours after the operation: the patient was seized with rigor, fever, delirium, and every symptom of inflammation; and, in spite of every necessary effort, died on the fourth morning. Upon examination, no one thing particular appeared on the brain which could be supposed the cause of so sudden and violent a change. This event, and a circumstance of like nature happening at no great distance from him, much about the same time, emboldened the writer to omit the operation in the first instance here mentioned, which occurred about a twelve-month after; and he has pursued the same means ever since, except where the bone was much shattered and driven in.

Since the first edition of this book, in which the above particulars were enumerated, the author's opinion and practice have been confirmed in four instances of extensive fracture in the parietal and frontal bones, that were under his immediate direction; from all which instances, he thinks himself authorized to declare, at least, that the operation is not so generally necessary as it is declared to be; more especially when "no external mark points out the seat of the injury." The principal call for the trephine is, when the symptoms are so oppressive, and continued as to denote great injury on the internal parts, or when the depressed or shattered parts of the skull do violence to the meninges, or substance of the brain.

The indications of internal mischief from blows
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on the head, where there appears to be neither fracture nor depression, are, the pericranium being detached and puffy, and painful symptoms supervening; pain, drowsiness, &c. going off and returning a few days after the injury has been received, together with a quick tight pulse, and repeated shiverings; a sanious matter being at the same time discharged from the wound, and the puffy part being very sore and tender. The cause of such complaints is said to proceed from the circulation between the pericranium and dura mater being interrupted; from the vessels of the latter membrane being detached; and from pressure occasioned by extravasated blood: under which circumstances, inflammation and putrefaction are to be expected; and therefore, in every such case, the operation is strictly enjoined. Admitting all these causes and effects, is it not probable that venæsection, duly performed, together with the diaphoretic and antiphlogistic remedies, will answer every intended purpose, independent of perforation, in the early stage of the disorder; and in the latter period, that the bark and antiseptics would be much more likely to succeed?

When the force of a blow is sufficiently violent to cause extravasation, depression, or fracture, is it to be expected that the extravasated blood will be confined to a particular spot, or extend but a little way round? Can it be supposed that the fluid will be wholly discharged by the perforations commonly made upon such occasions? And further, if inflammation be, in consequence of pressure from extravasated blood, how would it be possible to prevent that effect in more diffused extravasations, by a partial operation? At the same time, it may be asked, what becomes of the blood which cannot find its way through the opening?

To expose the dura mater, or any membranous part that is naturally concealed, is not a matter of indifference; it commonly produces or increases

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mation, and sometimes terminates in maturation or gangrene. When, therefore, the symptoms that occur from the accident are moderate, and the injury done to the cranium is not complicated, the method recommended by Mr. Blomfield, and the antiphlogistic treatment, which consists of venæsection, diaphoretic, cooling and aperitive medicines, with diluent drinks, are most likely to succeed. That eminent practitioner advised as follows: Venæsection, a stool or two to be procured by glyster, or some gentle aperient, and the warm bath, as preparatives; then give a dose of Dover's powder. He says, that every symptom of concussion generally goes off on the powder producing a copious sweat; and advises the patient to lie between blankets during the process, and afterwards to keep up a gentle diaphoresis, by continuing the use of the powder, or some medicine of that class, such as antimonial or ipecacuanha wine with tincture of opium, and to repeat bleeding according as symptoms, or the nature of the habit may require, until the danger is over.

The several instances of success which have followed this mode of treatment, do surely warrant the practise when no very violent oppressive symptoms occur. No one can suppose that such means, although they have been attended with all desirable success in very bad cases, should be trusted to, when the bone is greatly shattered and depressed; more especially when a part of it is struck in upon the dura mater. When matter is discovered upon or beneath that membrane, perforations with the trephine are ordered to be repeatedly made according to the course of its stream, and we are directed to give vent to it by puncture of that membrane: the rule, as to puncture, is certainly advisable; yet, in the other case, it may be as safe to operate rather sparingly.

Most authors advise a strict search after the utmost extent of the fracture in every direction, and per-

perforations to be made in proportion thereto ; but let it diverge ever so much, experience has proved to those who are not so sanguine in favour of the operation, that the skill of the surgeon is chiefly wanted to relieve the membrane from depressed pieces, which, when the fracture is irregular, may require two or three perforations.

One general maxim ought to be observed in this and every other disorder where cavities are concerned, to expose membranous parts naturally concealed as little as possible : and this is not only advisable to prevent inflammation, but, in weak and vitiated habits, to obviate a continued efflux of matter, which, in spite of every effort to the contrary, too often demolishes the patient.

These strictures are not meant to deny the necessity of the operation, but to caution the young surgeon from yielding too implicitly to the practice of it. In blows of the head, which have deprived the sufferers of their senses at the time when received, succeeded by pain, and a languid dull inactivity, it was a maxim with some practitioners to lay the bone bare ; and although, upon strict search, neither fracture nor depression can be discovered, to proceed directly to perforation ; yet though they may plead great authorities, such conduct cannot be generally vindicated. Why should they so readily fly to an operation which might be dispensed with, by the application of less violent means ? Such are venæsection, according to the nature of the habit and violence of the symptoms, repeatedly administering the diaphoretic powder or drops, occasional glysters, and the like. Besides, proofs are not wanted, of recovery from much more violent injuries, without perforation.

The following short account is given, as a proof that blood may lodge in quantity on the brain ; that it is not always productive, by pressure, of inflammation, suppuration, or sanies ; and further, that,

notwithstanding such lodgment, the mental faculties may continue in full force.

A person of a sanguineous habit was seized with an apoplectic fit, from which he soon recovered. Five years after he was again attacked, and died suddenly. The head was opened, and much fresh blood was discovered in the left lobe of the brain; between its convolutions were found several lumps of concremented blood, one pretty large, which had lost its red colour; all which most probably proceeded from a ruptured vessel in the former attack. This person had been many years subject to severe head aches, for relief of which he now and then lost some blood from the arm. Between the two attacks, his head-ach was attended with giddiness, which occasioned a more frequent call for the lancet; notwithstanding which, he transacted much business in the mercantile line, and took long journeys on horseback.

A material distinction is to be observed in the symptoms and treatment of injuries arising from concussion, and those from internal contusion; or, as it is more generally understood, compression. The symptoms attending concussion, which appears to have a more immediate effect on the brain and nervous system, are, a round, soft, and slow pulse; a general debility and inertness over the whole frame, a deep sleep, and silent breathing, together with little or no contraction of the pupil on the eyes being opened against a strong light.

The marks of internal contusion, which more immediately affects the membranes of the brain, and from which inflammation is most likely to take place, are, a full, hard, and quick pulse, an oppressed respiration, restlessness and tossing about the limbs when roused, and a lively contraction of the pupils.

In the former case, bleeding should be cautiously repeated; a moderate dose of Dover's powder, or the

diaphoretic drops, may be now and then administered, and an enema, or a gentle laxative occasionally. Afterwards, if debility continue, wine, bark, and opium will be necessary; whereas the inflammatory kind requires repeated bleedings and evacuates, according to the violence of the symptoms and strength of the constitution; also diaphoretics and nitrous medicines. A tight rising pulse, and firm crasis of blood, are the most certain indications of repeated blood-letting.

The operation of trepanning is to be performed after the following manner; the head shaved, and the patient being seated upright, or placed on a bed, or table, and properly secured by assistants, so that the head may be kept in a steady posture opposite the light; make a semi-oval incision according to the nature or extent of the fracture, or contusion of the integuments, with a round-edged knife, through the scalp, and dissect it off; then remove as much of the tendinous expansion and periosteum as is necessary, till the bone is bare.

The bone being sufficiently exposed, and the hæmorrhage suppressed, fix the perforator to the handle, and make a slight entrance at such a point of the fractured part as will admit of the saw taking in a portion of the shattered and depressed bone; then removing that instrument, fix the crown-saw with the pin, in the hole made for its reception, and twist it circularly till the teeth are fairly entered; after which withdraw the pin, and work the saw briskly till it reaches the diploe, now and then cleansing the teeth of the saw, and the groove in the bone, with a tooth-pick and brush. In some parts there is no diploe to be found, in which case it is proper to proceed with greater caution, frequently sounding the depth and equality of the groove with the tooth-pick, and bearing the saw hardest upon that part of the bony circle which looks whitest, and gently where it has a blueish cast. When the latter

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appears,

appears, move the saw with great caution; for fear of wounding the dura mater, till the piece of bone grows loose, then endeavour to remove it by a circular twist with the forceps, and smooth the bony edge with the lenticular, removing such little pieces as may lodge in or upon the dura mater. If that membrane appear dense and discoloured, as if blood and matter were confined beneath it, an incision must be cautiously and gradually made through it with the back-edge of a lancet, so as to form an opening sufficient to give vent to the contents; taking care to avoid the arterial branches, whose course is mostly to be discovered by their pulsation.

In the performance of this operation, some have recommended the trephine, others the trepan; the handle of the former is like that of a common gimblet, and by far the most handy; the latter has the form of a joiner's whimble, admits of greater expedition, but is not so manageable at the latter part of the operation.

It may be remarked, that some parts of the skull are not so eligible to operate upon as others; for instance, along the sagittal suture, and down to the nose, on account of the sinusses and the spine of the os frontis. The bony sinusses near the orbits of the eye, and the greatest part of the occipital bone are also exceptionable; yet in compound fractures, when the bone is much shattered, or drove in, it is the business of the surgeon, let the hurt be where it may, to relieve the injured membrane, and carefully to remove such a portion of bone as will afford vent to consequent discharges.

After the use of the trephine, the most proper dressings are, dry soft lint lightly applied, or in case the parts are dry, thinly spread with white cerate, to be repeated according to the nature and quantity of the discharge, afterwards as an incised wound. Greasy and spirituous applications are seldom

dom used ; a solution of myrrh in barley-water, softened with honey of roses, is commonly applied with a soft pledget of lint to the dura mater, when that membrane is injured. Sometimes a fungus rises from it, which if not restrained in due time by lunar caustic and a proper degree of compression, is apt to increase considerably, and may require to be removed with the knife, but this is seldom necessary to be done, except from bad management.

Messrs. Minors and Jones, in a case recorded by them, have proved the utility of preserving the scalp, and laying it down in immediate contact with the dura mater, and healing by adhesive inflammation.—Vide Minors's History of Trepanning. The operation was performed as free from angular points as possible, after the following manner.

A simple incision was made through the principal part of the wound, five inches in length, agreeably to the direction of the fracture, down to the periosteum ; and the scalp was closely dissected up on each side, so as to make room for the application of the trephine. In a fracture of a large extent, a farther dilatation may be made by a transverse section of one of the lips of the incised wound, beginning from near the central point of that lip which covers the greatest part of the fractured bone. After the bone had been carefully removed, and the dura mater well spunged, the inner surfaces of the flaps of the scalp, the pericranium, and the dura mater, were all lightly moistened with a sponge dipped in warm water, and the whole of the scalp was laid as apposite as possible over the denuded parts, and the edges retained close to each other by long and narrow slips of plaster, over which were applied a soft pledget of fine tow, spread thin with yellow cerate, a soft compress, and a six-tailed bandage. Other cases have been attended with like success, for some of which, vide London Med. Journal,

vol 5 and 7; also Mr. Blount's Case, London Med. Memoirs; vol. 3.

DISORDERS OF THE EYES.

OPHTHALMIA.

DESCRIPTION. Inflammation of the eyes generally begins with redness in the tunica conjunctiva, commonly called the white of the eye; the eye-lids swell at their edges, the eye is hot, stiff, and dry, and is troubled with an uneasy pricking sensation, as if dirt was lodged between that part and the lid; and the access of light and air gives great pain; sometimes the membranous appearance of the conjunctiva is lost, and the complaint reaches the sclerótica, and the deeper-seated tunics.

The inflammation is attended with more or less pain, and is of greater or less moment, according to the depth it reaches to. When light is intolerable, and acute pain darts through the head and temples, the internal coats and the retina are most probably affected. The dryness of the eye is mostly succeeded by a profuse flow of hot, thin, acrid fluid, which frequently excoriates the neighbouring parts, and turns purulent. When the eye-lids are much affected, a discharge of viscid gummy humour is apt to close the lids, particularly towards morning. The inflammation and pain increasing, the vessels of the external coats become extremely turgid, fever, and its train of symptoms occur, and suppuration is sometimes the consequence, though very rarely, except from violent injury or morbid affection. A thickness and opacity in the membranous parts, or humours, are the more common consequences. This disease then is either primary or symptomatic.

CAUSES.

CAUSES. Ophthalmia proceeds from blows, wounds, extraneous bodies fixed in the coats of, or lodged between the eye and eye-lid, from too great light, intense heat or cold, piercing winds, lucubration, habitual drunkenness, rheumatic, venereal, and scrofulous affection, small-pox and measles.

CURE. Bleeding is generally prescribed, and should be repeated according to the degree of inflammation, pain, and fever. When the pain is acute, deep seated, and formidable, it is recommended to open the temple artery, or external jugular; but except in very particular cases, the common mode of blood-letting will answer every necessary purpose. Leeches, applied repeatedly at a moderate distance from the exterior angle of the eye-lid, are beneficial, and sometimes blood is drawn with the point of the lancet from the turgid vessels of the eye. Blisters behind the ears, and between the shoulders, will divert the inflammation, and are said to be very beneficial when applied to the temples, upon the part where leeches have just performed their office, immediately after the bleeding has stopped.

In the inflammatory kind also, cooling remedies and regimen are highly necessary; and a pill, with two or three grains of calomel, the same quantity of camphor, and about a third, or if much pain, half a grain of opium, for two or three succeeding nights, followed by a gentle laxative, and occasionally repeated, have been of great use both in the early and latter stage of the disorder. In obstinate and chronic cases, perpetual blisters, setons, issues, and caustics behind the ears, have been particularly useful. Constitutional causes must have relative treatment.

Various external applications have been used for this complaint, but none so much of late as Goulard's saturnine water, cold; both in the form of a lotion,

lotion, and braided into a poultice with the crumb of white bread. The stimulus of the hot acrid discharge may be much allayed, by applying the pulp of a rotten apple. When there is much tension and dryness on the part, a lotion, with infusion of chamomile flowers and milk just warm, or a slight decoction of poppy heads, may be serviceable; but the thebaic tincture of the London Dispensatory, made with mountain wine, as particularly recommended in a late ingenious publication by Messrs. Wathen and Ware, is an excellent topical remedy. Two or three drops of it are ordered to be dropped into the eye once or twice a day, or to be applied on the point of a camel-hair brush. It occasions a sharp pain at first, and a great flow of tears, which, gradually abating, the eye is left in a much easier state than before the application. It will be necessary to defer its use in some habits, till the excessive irritability and inflammation of the parts have been lessened by proper evacuants and cold applications.

When the eye-lids are gummy, or inclined to hang together, most probably their edges are slightly ulcerated; to prevent such adhesion, a small portion of bland unguent, or of the unguentum citrinum of the Edinburgh Dispensatory, may be placed between them at bed-time, which should be washed off with milk and water the next morning. This ulceration is a frequent cause of ophthalmia. Bates's camphorated water, properly diluted, is an excellent guard against relapse, both to the eye and eye-lid, after inflammation has been removed; it is much recommended by men of experience, before-mentioned, and is prepared as follows:

Roman vitriol, and armenian bole, each one dram; camphor powdered, with a drop or two of spirit of wine, half a dram; make them into a powder. Throw a dram of this powder

powder into a pint of water whilst it is boiling, then remove it from the fire, and set it by, for the fæces to subside.

A dram of this solution, mixed with two ounces of cold water, may be used as a lotion.

Every inflamed eye should be defended from the effects of heat and cold, and be shaded from the light; the best contrivance for which purpose is a pasteboard-hood, lined with green silk. In dangerous cases, particularly when the eye is wounded, and when the internal membranes are much affected, the patient must submit to confinement, in a cool room, where little or no light enters. The practice of binding down the eyes with cerate, compress, and bandage, is highly injurious.

Inflammation of the eye, or eye-lid, from a constitutional cause, requires medicines calculated for the removal of the original complaint, together with local treatment. When it proceeds from blows or wounds, the most necessary applications are, the saturnine water, poultice, and cerate; with bleeding, laxatives, and opiates.

If dust, grit, or any extraneous body adhere, or is fixed to any part of the eye, so strongly as not to yield to the use of an eye-cup, or to the stream from a syringe, it should be separated by a blunt-pointed director, or with the point of a lancet, otherwise suppuration around the part will be the unavoidable means of producing its exit.

Speck on the Cornea. This complaint is also called *Albugo*, *Leucoma*, and *Nebula*. It is a thickness or abscess in the different lamellæ of that membrane, and is chiefly the effect of inflammation; it derives its consequence from its size, depth, and situation, with respect to vision. The pearly speck is projecting, and proceeds from some kind of sore on the cornea; it frequently follows the small-pox. This kind requires to be opened with the lancet or couching needle, in order to discharge the matter, and
prevent

prevent its eroding the whole substance of the tunic. In this species the projecting part will require to be touched with escharotics, or medicines of the astringent kind, as prescribed in the preceeding state of the complaint, such as Aq. sappharina, a weak solution of white vitriol and verdigrease, Bates's lotion, and sometimes a solution of corrosive sublimate has been carefully and effectually used.

The cure of the *dry speck*, or thickness of the cornea, has been brought about by various remedies; levigated glass, sugar, with a very small portion of calomel, tutty, and scuttle shell, finely levigated, blown through a quill, and mixed with the simple ointment, or made up in the form of a lotion; and when it arises from a venereal, scrofulous, or rheumatic diathesis, a mild mercurial course by friction with bark, or calomel and cicuta; the mercurial solution must be pursued.

The above remedies have often removed specks, but do not always prove effectual, especially when the disorder has pervaded several laminæ. The projecting speck has been sometimes safely removed with a thin double-edged scalpel, but it is an operation that requires the nicest care and circumspection, and a very steady hand. A late celebrated itinerant failed in this operation, by attempting the removal of a deep-seated speck: the edge of the knife was set off too deep, and a circular hole was made in the cornea, through which the aqueous humour was immediately discharged; unfortunately for the patient, great inflammation ensued, and the whole of the eye suppurated. The Doctor decamped on the third day, and left the cure to chance, after having received a generous fee. Such men are too apt to undertake impossibilities, and impose upon the misfortunate, and their too credulous relatives.

Ulcers and Excrescences on the Eye. They are produced from various causes, and are of more or less con-

consequence, according to the part ulcerated, and the general state of the habit. External injuries, inflammation and suppuration, venereal and scrofulous taint, and small pox, are general causes. The best local treatment, after inflammation, is, touching them with a camel-hair brush dipped in camphorated vitriolic water, diluted in proportion to the sensibility of the part; or a weak solution of corrosive sublimate in water, such as one grain to three or four ounces, particularly if the edges rise.

Should fungus grow up, lunar caustic may be cautiously and repeatedly applied; taking care to keep the eye open with a speculum, and to wash it off with a small hair brush dipped in warm milk, before the eyes are suffered to close. It may also be removed with the scalpel. The best method of extirpating large excrescences, particularly when the base is broad, is to pass a ligature through the middle, with which the tumour may be raised and fixed more steadily, and carefully to dissect it off with the common scalpel. Pendulous tumours and excrescences have been successfully extirpated by ligature.

A slight solution of gum myrrh in lime-water, has been useful in drying up and restraining loose fungus in other parts; perhaps, if applied early, it might have the desired effect in this case, properly suited to the sensibility of the part. A continued use of the lunar caustic, after the manner before described, has lately proved effectual in destroying a large growing fungus seated near the internal canthus.

Encanthis and Membranous Expansion. This is a flattish expanded membrane, which shoots out from the external canthus of the eye, and spreads like a thick web over great part of the eye-ball: it is of a reddish or palish yellow colour, and when inorganic resembles a finger-nail, and seldom proceeds further than the edge of the cornea: the latter does not
arise

arise from inflammation, is not therefore so injurious in its nature, or so likely to spread over the point of vision as that which does; and requires little to be done, except washing it with astringent lotions. This complaint does not always take its rise from the same part. In slight cases, proceeding from inflammation, the best applications after that is removed, are of the vitriolic, aluminose, and saturnine kind, made agreeably to the irritability of the diseased parts. Escharotics are both dangerous and ineffectual; repeated scarifications, and afterwards, saturnine or restraining solutions, with necessary precaution against inflammation and adhesion, have been attended with success. Should vision be irrecoverably lost, and the tumour be hard, livid, and painful, and likely to degenerate into cancer, extirpation of the eye may be requisite.

Abscess within the Eye. Internal inflammation will sometimes produce a purulent kind of matter, which diffuses itself throughout the cavity of the eye, and mixes with the aqueous humour; the eye-ball is enlarged, and vision is totally obstructed: severe pain and feverish symptoms are the consequences, and the eye, if not timely opened, will burst of itself. This abscess mostly arises from external injury, and like other sores, requires to be opened in the most prominent part, and the purulent contents should be gently pressed out. When the complaint is of that nature that the iris is particularly diseased, and forced against the cornea, it is termed *Staphyloma*, from a grape-like appearance. When the collection of purulent matter lies in the anterior chamber of the eye, and distends the cornea only, it is called *Hypopyon*. This complaint begins and continues with pain in the eye, although not to the degree of the former disorder, being principally confined to one part of the eye: the contents are to be discharged by a moderate opening made at the inferior part of the cornea, a line or two from the tunica conjunctiva.

tiva. After the matter has been evacuated, the best applications are compresses wetted with Goulard's saturnine water and the cerate: a cool regimen must be observed.

Dropsey, or Water in the Eye. The eye is liable to be distended, and even to burst, from an extraordinary quantity of watery fluid collected therein. This disease begins with a sense of fulness in the part, and the eye imperceptibly grows bigger; vision in the mean time gradually declines, and in process of time is entirely lost; the cornea protrudes greatly, and, if not timely opened, will burst.

Before the globe of the eye is distended to such a size as to destroy the power of vision, tapping the part may be a means of recovery. It is to be performed by passing the end of a sharp-pointed round instrument, not thicker than the blunt end of a common probe, and fixed to a long handle, into the most depending part of the eye-ball, just behind the iris, as practised in couching. The shape and look of the eye, at least, will be better preserved, by not deferring the operation too long; bracing medicines, both external and internal, should be afterwards used.

Blood within the Eye. The cavity of the eye, from external injury, is sometimes distended with blood, in such quantity as to render the aqueous humour opaque; and when this extraneous fluid is not likely to be absorbed, and the sight continues to be obstructed, it becomes necessary to operate as for the extraction of the cataract. The aqueous humour passing away with the blood, will give the eye a diminished appearance, but it will be restored to its natural state soon after the wound in the cornea is healed.

Displaced Eye-ball. The globe of the eye may be driven from the socket by external violence, and thrust forwards by tumours or abscesses formed within the orbit. In cases of this nature, the optic

nerve is very likely to receive injury, by being overstretched or compressed. Two extraordinary cases of dislocation are related by two eminent men in the profession, which prove that vision is not necessarily destroyed; the one instance was a dislocation by violence, the other by a large scirrhus tumour. Vide Cases in Surgery, by Mr. Warner, and by Mr. White, of Manchester.

If caused by violence, the part should be replaced as soon as possible; if abscess be the cause, the contents should be discharged, and the cyst be at least partly removed; if it be occasioned by an excrescence or indurated tumour, extirpation of the diseased part will be necessary. Tumours of a considerable size may be removed with no great difficulty, and with perfect safety as to hæmorrhage. The operation appears formidable and excites horror; but many a life has been lost for want of proper resolution. In such cases every precaution should be taken to prevent inflammation.

Scirrhus, or Cancerous Eye-ball. When the diseases of the eye itself degenerate into scirrhus or cancer, extirpation becomes absolutely necessary; and the earlier in the disease it is performed the better. In doing which the following method is to be pursued: The patient, assistant, and surgeon being properly stationed, let the eye-lids be separated as much as possible. If the eye be prominent, the surgeon may take hold of it with his fingers; otherwise, a broad ligature is recommended to be passed rather beyond the centre, through the body of the tumour, with which it may be conveniently drawn forth by the surgeon, who, at the same time, is to dissect out, with a common scalpel, every part of the ball from the socket. The hæmorrhage is mostly to be stopped with lint and flour, but, if necessary, may be readily checked by slightly touching the vessel with the actual cautery. The whole of the orbit is to be filled with lint, and a bandage, if necessary, may

may be made, rather tight, over all. Light and easy dressings are afterwards to be applied, and care ought to be taken to prevent the growth of fungus, to check inflammation, and to relieve pain with opiates.

Artificial Eyes. Great ingenuity has been displayed in forming and fixing these substitutes: those which were sold some time ago by Mr. Watson, Coverley-fields, Mile-end, were fabricated upon an improved plan, and could be worn with the greatest ease and safety. Such instruments are most likely to answer the intent, where a muscular part of the eye is left.

CATARACT.

DESCRIPTION. The cataract is a disease absolutely confined to the crystalline humour, attended with discolouration, and more or less opacity. Cataracts have been variously distinguished, and many false ideas have been formed about their consistence, from their colour. The grey, wheyish, or blueish coloured, were formerly considered as loose and soft, the white as hard, &c. of which the contrary has been often proved. But at this time of day, colour is not looked upon as a proof of their consistence. Every cataract also, which, from the above mistaken principle, was supposed to be soft, was thought to be unripe; and the contrary. The most probable conjecture about consistence, may be formed from the following observations:

When the pupil remains in a state of dilatation, notwithstanding it is exposed to a strong light, the cataract most commonly proves soft; on the contrary, when capable of perfect contraction, the diseased part is generally more firm and resisting.

It is worthy of remark, that the external part of the crystalline lens, in its natural state, is softer than its internal, and some of the most experienced persons are of opinion, that it commonly grows softer

in the diseased state. They also notice a mixed cataract, which is found to be softer externally, and firmer in the centre than in the natural state, and that sometimes the whole of the crystalline will be dissolved into an uniform fluid of a jelly-like consistence.

The notions, then, respecting colour, consistence, and maturity, are too visionary to be regarded. Opacity is alike the consequence; and success has proved, that as soon as the humour becomes entirely opaque, the operation may be properly undertaken in every state, except when the disease is attended with adhesion to the iris, or an affection of the retina.

It sometimes happens that the cataract adheres to the iris so firm as to render it immoveable. This may be distinguished by shutting the patient's eye, and rubbing the eye-lids; afterwards, upon opening them suddenly against a strong light, the pupil will be seen to contract, provided there be no adhesion. A few cases, wherein the adhesion was slight, have been operated upon with success: but should the retina be affected, blindness will remain after the cataract has been depressed. The state of that membrane may be ascertained from the insensibility of the iris to the rays of light. The black cataract, as it has been called, and described by authors, wherein no disease is said to appear, and where the pupil looks black, as in the natural state of the eye, is most probably the amaurosis, or gutta serena. Cataracts may be divided into three kinds, the soft or floating, the mixed, and the firm or hard.

CAUSES. The cataract may be supposed to take its rise from inflammatory disorders of the head and eyes, occasioned by external injury, or internal defluxion. Scrofulous habits are more particularly subject to it.

CURE. Previous to an account of the operations for

for the cataract, it will not be amiss to remark, that the soft cataract, if the capsula be freely divided, will mix with the aqueous humour, and be gradually dissolved; that the firmer parts of the mixed kind, when they have baffled every attempt to depress, may also be left to dissolve; and that in endeavouring to depress the firmer kind of cataract, even when having passed through the pupil it lodges behind the cornea, and no particular injury had been done to the parts within, the crystalline has gradually dissolved and disappeared, to the recovery of vision.

Provided the cataract be not complicated with any other affection of the eye, and that neither of the eyes be possessed of a tolerable degree of sight, the operation may be performed either by depression or extraction. The method of depression, or *couching*, as it is commonly called, is as follows: .

The patient being seated in a proper light, upon a stool of convenient height, let a pillow be placed between his back and the breast of an assistant, so that the patient's body be bent rather forward, and the head be inclined on the breast of the assistant: cover the other eye, and let the upper lid of the eye which is to be operated upon be raised up and kept so, by pressing it strongly against the superior part of the orbit, whilst the operator depresses the inferior lid. This being done, the patient should be directed to incline the eye towards the nose; then let the couching needle, with the flat surface towards the iris, be struck through the tunica conjunctiva, at a very little distance from the edge of the cornea, and in a line with the middle of the pupil, passing it cautiously forward till it appears behind that opening; then gently endeavour to depress the cataract with the flat surface of the needle, carrying it with the point towards the outward and back part of the eye. Should the cataract rise

again, move the needle carefully towards the under part of it, and gently try to raise it up, so as to dislodge it from its bed in the vitreous humour. If the cataract be mixed or firm, divide the capsula, and depress again and again; if uniformly fluid, make a free laceration of the capsula, turning the needle about within the body of the crystalline, and leave the parts to dissolve. If, upon dividing the capsula, the contents should spread, and mix with the aqueous humour, it will clear again in time, and the operation is as likely to prove successful as under any other circumstance.

The needle should be withdrawn in the same direction by which it was introduced. Most operators speak in favour of its insertion with the flat surface up and down, by which the coats will be wounded in the course of the fibres, and afterwards, turning the edge perpendicular till it is visible behind the iris; then using it as it is required. If the operator should not be ambidextrous, he will find it much more easy to use the awkward hand by standing behind the patient, and supporting the head upon his knee, or against his breast, than by using the best contrived instrument in an opposite manner. The speculum is seldom applied.

The proper applications to the eye, which should be kept closed from the instant that the needle is withdrawn, are, cooling repellents, such as compresses dipped in Goulard's saturnine water, his cerate, alum curd, and the like. The patient should lose some blood as soon as conveniently can be, and sit upright some hours after the operation. He should also live abstemiously for several days, and upon such food as will require little chewing. The body must also be kept gently open, and opiates may be occasionally administered to allay irritability or pain. Some persons are but little afflicted with inflammation and pain after this operation, others suffer

suffer severe pains in the head; to remedy which, bleeding in the jugular vein or temple artery, and blisters, have been found necessary.

To extract the Cataract, place and secure the patient and his eyelids, as before directed for couching, and desire the patient to fix his eye steadily, looking strait forward, or rather inclining upward: then plunge the point of the knife, suited to the purpose, into the eye, near to the edge of the cornea; and pass it carefully and steadily between that membrane and the iris, across the centre of the pupil, to the edge of the cornea on the other side, exactly opposite to where it entered; push the point about a quarter of an inch through that part of the cornea, after which move the knife gradually downward, so that the lower part of the cornea, between the points at which the knife entered and passed out, may be divided at equal distances from the iris: during the incision, and after the semicircular cut has been made, the pressure, whether by the fingers or speculum, must be moderated.

The incision being compleated, raise up the flap in the cornea with a blunt flat and crooked probe, and carefully passing the point of a couching needle, or small probe, through the pupil, make an opening in the tunic of the crystalline; after which, force out the cataract by equal and moderate pressure. Its removal will be much favoured by shading the light, which will cause a greater dilatation of the pupil. Should the crystalline lodge in the anterior chamber of the eye, it may be removed with the small scoop contrived for that purpose; but it seldom happens so, unless the opening in the cornea is too small for it to pass: the most handy instrument for enlarging the opening when necessary, is a small pair of probe-pointed scissors.

The operation being finished, dress the eye as directed after couching. The patient should be

kept in bed on his back, in a darkened room, and on a low diet, for several days. Repeated bleedings may be necessary; and that operation is thought most effectual, when the after-symptoms are very violent, if performed in the jugular vein, or temple artery.

M. Pellier, whose practice in the extraction of the cataract, is reported to have been particularly successful, recommends bleeding in the arm as soon as the operation is over; and if inflammation comes forward, directs leeches to be applied near the eye; if the symptoms should render further bleeding necessary, he prefers drawing it from the foot. He also orders pediluvium, Arabic emulsion with nitre, and diluting drinks. When the inflammation is obstinate, he puts great confidence in dividing the turgid vessels of the eye and eyelid, and applies pads with alum curd.

He closes the eyelids immediately after the extraction of the lens, and covers the part with a dry bag made of soft linen rag, half filled with wool, which he gently binds on with a linen bandage round the forehead, and a slip of the same carried under the chin, and over the top of the head. In favourable cases, the first dressing is seldom removed till the fourth or fifth day, when the eyelid is cautiously lifted up, in order that the part may be gently cleaned with milk and water: after that time, the bag is gradually lessened, is applied every other day, and, at the end of three weeks, is relinquished for a covering of green silk.

Mr. Warner in his Cases, describes a method of extracting the cataract with one instrument only.

Upon comparing the advantages and disadvantages of the two modes of operating, some men of experience give the preference to depression; and when we consider that extracting the cataract is liable to two incidents, which are not known to have happened

pened after couching, namely, a general suppuration, and a wasting of the eye; surely depression should be preferred.

The principal objections to couching are, the chance of its rising again, piercing through so many coats of the eye, and the danger of wounding the iris. The first is an unlucky incident, which may most commonly be prevented by pressing the lens to the bottom of the eye, and carrying it on the point of the needle towards the outward and back part of the eye, as it were burying it in the vitreous humour; besides, the operation may be repeated again and again, and at length attended with success. Mr. Warner gives, in his Cases, a remarkable instance of couching in the right eye of the same person four different times, in the space of two months; and says, that the patient was capable of reading and writing in a fortnight after the fourth operation. It appears also, that the lens adhered a little to the back part of the iris, and that operating upon the other was unwarrantable, on account of general adhesion.

The second objection is, that in consequence of wounding so many coats, the eye is often affected with an obstinate inflammation and continued pain. Still it will be allowed that extraction is of much more dangerous tendency, than depression was ever known to be, when the case was free from adhesion and well managed.

The third objection, viz. that the iris is liable to injury from the needle, is of little moment; as it may be always avoided by an attentive operator, except there happens to be a slight adhesion, as in the foregoing operation, which being dexterously managed succeeded to admiration. The iris is liable to injury also in the operation by extraction, when the lens is forced with difficulty through the pupil.

Though medicine is little regarded in the cure of cataracts,

cataraçts, still it is not unlikely that relief may be had at the beginning of this disease, when dimness of sight is first observed; if attended with inflammation and pricking-darting pain, bleeding with leeches and otherwise, with gentle laxatives, and a temperate regimen may be serviceable, if not relieved by such means, and opacity increase, particularly in a scrofulous habit, small doses of calomel with the extract or powdered leaf of hemlock, will be more likely to take effect; or persevering in an alterative mercurial course by friction, together with the cortex twice a day. Electricity also is recommended in the first stage of the disease, by drawing sparks from the parts adjacent, or giving slight shocks. Blisters and a seton in the neck are thought useful.

Contracted Pupil. The iris or pupil is sometimes so closely contracted, as not to admit light enough for distinguishing objects. This complaint may arise from a violent ophthalmia, adhesion to a cataract, or a paralysis of the strait fibres.

Mr. Cheselden has given an account of his dividing this part with success in the two first distinctions. He performed the operation after the following manner: the eye being fixed open with the speculum oculi, he passed a single narrow-edged scalpel, with its blade held flat, and the edge of it from him, through the sclerotica, as in couching, between the ligamentum ciliare and the circumference of the iris into the anterior chamber of the eye: he then divided the membrane, which when there is no cataract is said to fly open, and leave a large orifice. If there be a cataract behind, it will be proper to make the opening above it.

This operation has been seldom attempted since Mr. Cheselden's time, and its event is looked upon as very precarious. All possible means should be used to prevent or check inflammatory symptoms.

DISORDERS OF THE EYELIDS.

Tumours and Tubercles are often to be met with on the eyelids. The *Hordeolum* is most frequent. When this kind of tumour is hard, red, and fixed, and is of the inflammatory kind, it is called a *Stye*, which mostly breaks of itself, and disappears.

Various unnecessary distinctions are made of these and most other complaints of the eye and eyelids. Of these tumours are mostly of the encysted kind: they are of different shape and size, and replete with humours of different consistence; they are hard or soft, vesicular or œdematous, round or oblong, with narrow or broad bases, moveable or fixed: and their causes are similar to those of other parts. If they tend to inflame, suppuratives ought most generally to be applied; and they will require to be opened. Should they incline to grow larger without inflammation, it will be proper to remove them, which may be done with the knife, or a ligature made with thread waxed, silk, or hair. Those that have a broad basis, will require some care in dissecting.

It will be better to let out the contents if the cyst be thin, and then, with the assistance of the hook, to dissect as much of it away as can be done with safety, making the first incision parallel with the eyelids; if steatomatous or firm, it is most convenient to preserve the cyst whole. After the skin and cellular membrane, which covered the tumour, has been divided with the scalpel, it is advised by some to pass a waxed thread through the cyst, and for an assistant to keep drawing the tumour whilst the surgeon is dissecting; but in common, if the eyelid be steady, the operator will be able to manage the hook with equal ease and advantage. The ligature is particularly calculated for those which have a narrow base.

When

When the tumour has been removed from within the eyelid, a bland lotion is all that can be applied; if externally, the dry future, or the interrupted with a fine needle should be used, and soft lint must be applied. When the contents are discharged, slight saturnine or vitriolic solutions will be proper to prevent inflammation, and to constrict the parts.

Warts and Fleishy Excrescences are also apt to grow upon these parts; they frequently become large, and require to be extirpated, and treated after the manner stated in the preceding article. Caustic applications were much used formerly, to remove these and other complaints of the eyelid; but at this time they are little thought of. Abscission and ligature are the principal means of cure. Warts and sarcomatous tumours on the eyelids have proved cancerous in some habits.

Inverted and Relaxed Eyelid. Heister termed this complaint Trichiasis. The cartilaginous edges of the eyelids will sometimes turn inwards, in which case the hairs become offensive to the eye, and, from a constant irritation, occasion great pain and inflammation, so as in the end to endanger vision. Its *causes* are a derangement of the hairs, an irregular cicatrix from a burn, scald, wound, or ulceration, relaxation, and irregular affection of the orbicular muscle, and relaxation of the skin. It mostly happens to the lower lid.

The following remedies are advised, agreeably to the nature of the causes. For the inverted hairs, removal by tweezers, and confining the new hairs to the outward part of the lid by means of strips of adhesive plaster, as soon as they are grown long enough.

If from contracted cicatrix, one or more incisions may be made, in order to free it; the means prescribed in the subsequent complaint may also be necessary, in part.

To

To relieve relaxation or irregular affections of the muscular parts, an incision may be made across the eyelid down to the orbicular muscle; the contracted parts are then to be divided, and if the subjacent muscle should be affected, it will be necessary to separate the fibres of the orbicularis, to get at it, and treat it in like manner; after which, a small cauterizing iron moderately heated, may be lightly passed over the denuded fibres, so as to give them a regular contraction.

When this complaint is occasioned by a relaxation of the skin only, astringent solutions are proper; if they fail, a fold of the lid may be removed with the scalpel, and the edges of the skin should be laid exactly together, and be retained so by the adhesive plaster, if practicable; otherwise the interrupted suture should be made with a very fine needle. This operation is hardly feasible, unless the complaint is become habitual, and hazardous to the eye.

Everted Eyelid. When the edges are turned outward, and retracted so much, that the interior skin becomes prominent, the complaint is called *Ectropium*; and when the upper eyelid only is affected, it resembles the hare's eye, and is termed *Lagophthalmus*. Sometimes an inflammation of the eye, a sarcoma, or an encanthis, accompanies this disorder. It may arise from the same causes as in the former complaint, acting in opposite direction; and is sometimes the consequence of inflammation and tumour.

Little can be done for the relief of aged people, except the application of cooling restraining lotions. A proper instrument, contrived after the manner of temple spectacles, might be made to act as a support to the lid, with moderate pressure, and render the complaint less troublesome and unseemly.

When a tumour throws the eyelid outward, the cause, if practicable, should be removed. Supposing it to be occasioned from inflammation, the
means

means prescribed under that head should be used ; if the internal membrane be greatly thickened, and the protrusion be of long standing, scarifications are most likely to be of service.

The retraction is only to be remedied, by making an incision parallel, and near to the edge of the lid, so as to set free the strictured parts.

Contraction from an ill-formed cicatrix, is more likely to produce eversion than inversion ; and should be treated after the following manner : make one or more incisions, in order to set it free ; but if such means have not due effect, make an incision of sufficient extent through the integuments, and, by a careful dissection, raise the contracted part of the skin ; observing to re-apply the same in its proper station, and to keep it so by slips of plaster.

PRACTICAL SURGERY.

PART THE THIRD.

DISORDERS OF THE EARS.

THE ears are subject to various disorders, most of which arise from inflammation and obstruction. Inflammation of these parts may originate from the general causes already enumerated, and produce their consequent effects, such as tumours, abscesses, &c. Obstruction comprehends the imperforated meatus, tumefaction and dryness of the glandular membrane, collected wax and sordes, extraneous bodies, fungous and fleshy excrescences.

Inflammation and Pain. These complaints require the same treatment that is ordered for other membranous or nervous parts. Venæsection, and gentle evacuations by stool, diaphoretic, and nitrous medicines, sedatives, and saturnine or emollient cataplasms, according to the particular stage of the disorder.

Imposthume in the Ear. When an abscess has formed in the meatus, that part is commonly choaked up with matter; which not only obstructs the hearing, but may, from its lodgment and acrid nature, produce an obstinate ulceration; on which account it will be proper occasionally to syringe the ear

ear with a small quantity of the following detergent solution :

Thin barley water half a pint, or more, in which dissolve one dram of the best gum myrrh, then add one ounce and a half of honey of roses.

It will be sometimes necessary to administer the bark in moderate degree, and a gentle cathartic.

Imperforate Meatus. This natural opening, as well as most others in the human frame, is liable to be shut up from the birth, by a membranous covering or adhesion, immediately at its entrance, or more remote; it is therefore more or less difficult to remove. When not so deep as to endanger the tympanum, an aperture may be made with a narrow-bladed scalpel or lancet, which is to be kept open by dossils of lint, a piece of bougie, or soft tents of proper length and thickness.

Tumefaction and Dryness. The mucous membrane which secretes the wax, is apt to grow turgid and dry. This complaint may proceed from an acrid state of the juices, or a thickness after inflammation, and is generally a great impediment to hearing; scrofulous and venereal habits are most liable to it. For relief it is necessary to stimulate the part to secretion once or twice a day, with four or five drops of the following medicines :

Liquid opodeldoc and oil of almonds of each equal quantities. Or,

Pure oil of turpentine one scruple, oil of almonds, or pure olive oil three drams.

The steam of warm water, or of a mixture made with four ounces of the pectoral decoction, and two ounces of Mindererus's spirit, conveyed into the passage of the ear, has had the desired effect, especially when inclining to inflammation.

Sometimes a purulent discharge issues from the ear, arising from an increased secretion; this should be frequently washed away, at first, with the detergent,

gent myrrh injection, or soap and water, and afterwards may be restrained by one made gently restraining, with the bark internally, &c. In cases of a more obstinate nature, the habit should be particularly attended to. The bones of the ear have become diseased; to remedy or prevent which, the passage should be kept clean as possible, by means of injection.

Extraneous bodies. Indurated or concreted wax, peas, pebbles, insects, &c. may pass into the ear. *Wax* often gives way to a few drops of oil of almonds, instilled into the ear at bed time, stopping the opening with a piece of black wool, which on account of its springiness, is not so apt to insinuate itself deep into the passage as either lint or cotton. When more difficult to be removed, repeated injections with warm water, the most approved solvent, will seldom fail; after which, the oil and wool may be applied.

Warm oil is deleterious to most insects; a few drops will answer the purpose of destroying such as have entered the ear, and they may be washed out with the syringe.

Peas, or such bodies as swell, can seldom be removed but by dividing them into pieces, which may be done with small scissars and pliers.

Hard bodies may be loosened with the probe and extracted with the forceps; but when firmly lodged in the bony meatus, near to the tympanum, they have occasioned vehement pain and inflammation; which prevents them being extracted by the passage, and they can only be removed, by making an incision through the posterior and superior part of the ear, near to the bony part of the meatus.

Fungus and Excrescences may be removed, as in cases of the like kind, by the knife, ligature, or caustic properly guarded and introduced through a canula.

Instru-

Instruments, called trumpets, are ingeniously contrived for the benefit of hearing, and are particularly useful in collecting and modulating the sounds, when deafness is the consequence of some defect in the interior part of the ear, or auditory nerve: those made in the shape of a French horn, with a convoluted tube, are best adapted to the purpose. Internal deafness is to be relieved also by injecting into the eustachian tube, an operation more frequently attempted than duly performed.

DISORDERS OF THE NOSE.

POLYPUS.

DESCRIPTION. The Polypus of the nose, is a disease of the pituitary membrane, which lines the internal nostrils and parts adjacent: it has various origins and attachments, and is of different forms and sizes; obstructs the voice, respiration, and deglutition, and is difficult to eradicate. Sometimes it makes its first appearance high up in the nostril, and gradually elongates till it reaches beyond the wings of the nose, stopping up one or both passages; sometimes appearing in the fauces behind the uvula, at other times remaining concealed. It sometimes takes its origin from the os ethmoides and the adjacent sinusses.

It is a maxim with those who are not well acquainted with the different kinds of polypus, to aim at extraction in almost every case; whereas in some, the operation will neither prove successful nor safe. The Surgeon will be able to judge of the impropriety of using the forceps, from the following circumstances.

The malign, or worst kind of polypus, comes on with great pain in the forehead and upper part of the
nose;

nose; is of a deep red, or rather a dark purple colour; is painful to the touch, incompressibly hard, and when pressed, occasions pain in the eye or forehead, discharges blood and an offensive ichorous sanies, has a dark livid cancerous appearance, and adheres so much to the membrane covering the inside of the nose, that it will not admit a probe to be passed round the lower part of the nostril.

The benign, or milder kind is pale, greyish or light brown, springs from a pedicle, is seldom painful, is detached from the sides of the nose at some height, is not always of the same size, easily yields to pressure, when pressed is not painful, and may be extracted without much hæmorrhage or hazard.

CAUSES. They proceed from internal latent causes, and from external injuries; profuse hæmorrhages, catarrhs, or defluxions: they are sometimes attended with caries of the bones of the nose, from a venereal cause, and are truly deplorable.

CURE. Those of the malign kind, must be treated with palliative remedies, and alterative medicines suitable to the nature of the habit.

The benign may in general be extirpated with success; the method of doing which is, by a pair of forceps with an opening at the end of each blade, the inside of which is flattened and roughed like a file; this instrument is to be introduced about an inch and a half up the nostril, or more if practicable, taking sure hold of the tumour; then moving it from side to side, at the same time drawing it steadily downward. Some Surgeons advise twisting it round till separated, as being less injurious to the membranous lining of the nose, than absolutely tearing it away: but the latter mode is not so likely to produce a radical separation from the pituitary membrane as when the force is regularly directed downward. When the polypus breaks off short from its roots, the attempt should be renewed, unless much hæmorrhage forbids; if so, defer persevering, and wait for a bet-

ter opportunity. Sometimes a profuse hæmorrhage immediately follows the separation, but the vessels soon retract; otherwise, it may be stopped by dipping dossils of lint in some styptic tincture and powder, and passing the same up to the mouth of the vessel. If necessary, a small cautery like a thin knitting needle, may be passed through a fine tube to the mouths of the bleeding vessels, when high seated, and difficult to stop. The means particularly mentioned in the hæmorrhoidal discharge may be more easily and safely employed: but hæmorrhage is mostly trifling from the truly benign polypus.

Caustic, and actual cautery, have been formerly used, in order to destroy the fungous and broad-based polypus; but the attempt is in the present times entirely laid aside. In some cases, these powerful means might surely be re-assumed, if properly guarded, rather than suffer the complaint to proceed without a check. The lunar caustic is more manageable than any other; and it is well known that sarcomatous tumours in the eye, and other tender parts of the body have been cured, by cautious perseverance in that remedy, where the use of the knife was impracticable.

The free use of a solution of alum, or a decoction of oak bark might at first prevent the growth of a polypus. Mr. Bell is of opinion that the mechanical pressure of a proper sized bougie, would in some instances impede its growth, and in the very incipient state entirely remove it. The same respectable writer says, that the celebrated Dr. Monro and others have lately adopted a mode of extirpating the polypus by ligature, which Mons. Levrette practised some years ago, in the removal of a large excrescence in the vagina: and we are told that it has proved successful, even where the tumour completely distended the nostril. The polypus originating in the pharynx, or extending itself from the back nostrils;
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into the fauces, is also said to have been removed by the same means.

Here follows the application of the ligature to the polypus which proceeds down the nostril; a piece of pliable silver wire of sufficient length to admit of a proper sized loop at one end of a silver tube provided for the purpose, and long ends at the other, is to be passed in full circle, or, of necessary width, up the nostril, as near to the root of the polypus as possible, by means of the tube or canula, through which it is passed on one side, and a probe with a slit at its end on the other. The loop being properly fixed, each end of the wire that is left out at the lower orifice of the tube, must be drawn every day to a suitable degree of tightness, and be kept so, by being fastened to a small pin, which projects on each side of the bottom part of the tube, in a hilt-like form. The tube may be passed up the nostril with greater ease, if it be constructed rather more flat than round; some recommend a double tube on this occasion.

To apply the ligature to the polypus that falls into the throat, is much more difficult. The double extremity of a wire of sufficient length to admit a proper sized loop at one end of the tube, and long ends at the other, is to be gently pushed through one of the nostrils, so as to be perceived in the throat; the operator is then to introduce his fingers into the mouth, and open the double wide enough to encircle the neck of the tumour.

When the wire is properly fixed, let it be kept so till the ends which hang out of the nostril are passed through the double canula; which tube is then to be pushed up along the course of the wire, till it reaches the root of the tumour. Whilst the upper part of the tube is thus held in its proper place, the two depending wires at its lower end must be drawn so tight, as to make the necessary stricture, and to be fastened round the hilt, as before directed. A tu-

mour in the fauces of no small size has been thus extirpated in a few days.

Ligature is, in many instances, the most desirable mode of extirpating excrescences, and often proves successful in other parts of the body, more especially when the tumour has a narrow basis: but the polypus of the nose, which mostly takes its rise from the membrane that is spread over the *laminæ spongiosæ*, is too deep seated to admit of positive eradication, by any other means than extraction; and sometimes a cure cannot be effected without the separation of a bony lamina.

FISTULA LACHRYMALIS.

DESCRIPTION. The seat of this disorder is in the lachrymal sac, and nasal duct. It varies in its circumstances according to the degree of obstruction in the duct, the state of the sac, or subjacent bone, and the general habit.

When the sac is free from disease, and the nasal duct is open, the natural mucus is limpid, small in quality, and passes insensibly into the nose, together with the fluid secreted from the lachrymal gland, which passes through the *puncta lachrymalia* into the sac: but whenever the passage through the nasal duct is impeded, the mucus lodges in the sac, increases in quantity, changes its colour and consistency, and is discharged by the *puncta*. This is the general source of the disease; and except in bad habits, scarce ever originates from, or proceeds to an abscess or ulcer.

There are two states of this complaint, the imperfect, and the perfect. The first is a distension of the sac, and return of the mucus through the *puncta*, as already described; the latter, or perfect state; is when the course of the disease, from inflammation, or irritation of the secreting gland, or membrane of
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the sac, or a general affection of the habit, the discharge becomes purulent, and from its acrid state, produces inflammation in the cellular membrane, and the skin covering the tumour; which sometimes spreads to the eyelids, down the cheek, and the side of the nose.

When the diseased mucus can no longer find a passage through the puncta, the tumour is more and more distended, repeated inflammation renders the part covering the sac sloughy; and the discharge makes its way through a large opening in the skin, according as the teguments are more or less diseased.

This state is sometimes attended with a caries of the subjacent bones: but such a case very rarely happens, except in venereal, or strumous habits; and in the former, it is generally the consequence of the ethmoid bone being in a diseased state, therefore depends upon the cure of the constitutional complaint. Mr. Pott, who explained the disease with the greatest precision, has divided it into four stages, or states.

The first is, a simple dilatation of the sac, and obstruction of the duct, which upon pressure discharges a clear, or cloudy mucus, the skin covering the sac being entire, and free from inflammation.

The second state is, when the tumour is grown larger, the skin is inflamed, but entire, and the discharge through the puncta is of a purulent colour.

The third state is, when the skin over the tumour becomes sloughy, and bursts, and the mucus which used to be discharged through the puncta, makes its way through the opening in the skin, the nasal duct being thickened only.

The fourth state is, when the passage into the nose is totally lost, and the inside of the sac is either ulcerated, or choaked up with fungus; and in this state the subjacent bone is sometimes carious.

CAUSES. This disorder generally originates in a simple obstruction, or an inflammatory affection of the nasal duct. The worst state principally happens in cachectic, scrofulous, and venereal habits.

CURE. The ancients supposed this disease to be always attended with callosity, and most frequently with caries; they therefore thought the cure could not be complete, without removing the callosity, or laying the bone bare, which was done by caustic and cautery. Not knowing therefore the true cause and seat of the disorder, all they had in view was, to destroy the callosity, and forward exfoliation: and when by these means, an opening was made into the nose, a cure was sometimes accidentally performed. The present mode of cure is much to be preferred, and is perhaps as seldom known to fail as the former was to succeed. The principal intentions of the modern mode of cure are, to open and preserve the natural passage for the exit of the mucus and lachrymal fluid, or to form an artificial one in its stead.

In the first state, the aim is to recover the parts and passage without making an incision. The different attempts for that purpose are, by introducing a fine probe through the superior punctum, the sac, and duct, which is certainly practicable; but from the pain it occasions, and the consequent inflammation, can be of little use: by constant compression, whether by bandage, or the screw instrument, this can at best prevent only an accumulation from the passage through the puncta, and does not in the least contribute to remove obstruction in the duct; or by means of the syringe, which, if judiciously used in the recent state, whilst the mucus is perfectly clear, may prove serviceable; the trial, at least, can do no harm: yet by the frequent use of a restringent collyrium, and avoiding things which tend to irritate, or stimulate the membrane of the nostrils, and increase the lachrymal secretion, the disease in its re-

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cent state may be kept under for many years, perhaps during life.

In the second state, when the adjacent parts become greatly swelled and inflamed, and the skin is likely to burst, it will be right to make an incision into the upper part of the sac; taking care to keep the knife at a proper distance from the juncture of the eyelids, and beginning the incision just above a line drawn even from that part towards the nose, then continuing it strait downwards.

After the incision is made, the sac must be kept moderately distended with lint, or prepared sponge, in order to learn the exact state of the sac and nasal duct. Sometimes it happens, if the sac be not diseased, and the obstruction in the duct be slight, that after a free discharge for some days, and the inflammation from the operation is subsided, a superficial dressing, and moderate pressure, will heal the sore, and the cure will be complete. Indeed it is not at all improbable, that the common treatment of this disorder after the opening has been made, such as cramming it with lint, applying escharotics, and making too great compression, too often prevents the good effect. In the state here described, it will always be worth while to give this mode of treatment a fair trial.

If it should not succeed, or the third state should occur, in which there is not the least probability of its being effectual; an attempt should be made to render the duct pervious, by passing a probe, a piece of catgut, or bougie, as far as it will easily go, and occasionally repeating it, until it can be pressed through the passage that leads from the sac into the nostril. Previous to this attempt, the upper part of the sac should be dilated with a bit of prepared sponge, in order to get more readily to the duct.

The passage thus obtained, it should be diligently kept open for a length of time, with a piece of cat-

gut, a small bougie, or a leaden probe; now and then injecting down into the nostril, a little of the myrrh solution, or lime-water softened with honey of roses. When the opening is well established, the fore may be suffered to contract, so as to leave room only for the introduction of whatever is made choice of, for the purpose of keeping it so; and when the passage has been long enough to preserve itself, the tent may be withdrawn, and a superficial dressing applied over the external orifice. Whilst it is closing, a moderate compression on the sac will prevent a fresh accumulation of matter, and greatly assist the cure. A fresh collection will sometimes form, although the nasal duct remains open; in which instance, the process has been repeated with success. In all such cases, a great deal depends on the constitution, and the state of the diseased parts.

As the eye must be kept confined whilst the dressings are applied for the purpose of dilating the sac, it will be necessary to keep the skin as clean, and cool as possible, by means of cooling lotions, Goulard's cerate, &c. and to renew the dressing as often as the discharge renders it necessary.

The last state, or that in which the natural passage is so diseased as to be totally lost, or in which the bones are carious, is only to be remedied by piercing through the os unguis, which lies under the superior and posterior part of the sac, into the nose; and to render the perforation capable of affording a passage to the lachrymal fluid and mucus, after the external opening is healed. The curved trocar is the most proper instrument for the purpose; and care should be taken to make the opening through that part which lies immediately behind the sac, and not to thrust the trocar too far up the nose, for fear of injuring the os spongiosum; rather to turn the point obliquely downward, from the angle of the eye to the inside of the nose.

The discharge of blood from the nostril, and of
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air from the wound upon blowing the nose, will be sufficient proof that the opening is made in a proper direction. A tent of lint should be introduced into the breach of the bone, big enough to fill it, and long enough to pass into the cavity of the nose: this should be removed on the third or fourth day, and renewed daily until the sore is clean and granulated; and to prevent the flesh from closing the perforated part, the end of the tent may be moistened with small spirit of vitriol, or the part within the perforation touched once in two or three days with lunar caustic, well guarded at the end, with a quill. This may be done for some time; afterwards, instead of the lint tent, it will be proper to use a bit of bougie, catgut, or a leaden canula, of sufficient length and size, to reach from the edge of the wound, to the inside of the nose, and to suffer the sore to contract round it. The longer the patient wears this, the more perfect the opening; and when proper to be withdrawn, the sore may be dressed superficially; and healed with moderate pressure.

When there is no prospect of succeeding by the slighter operations, M. Pellier's practice is, to fix a tube, or canula, made of gold or lead, in the natural duct, or artificial opening into the nose, and heal over it; this tube has two circular projecting edges, one at the upper part, the other near the middle. This instrument must, in size and length, be accurately adapted to the sac, and the opening into the nose, and be steadily fixed there, by means of a perforating conductor, and a compressor, instruments well known to the instrument makers in London.

The wound he directs to be kept open with a dossil of soft lint, lightly spread with an emollient ointment, for ten days, or a fortnight; - observing daily to inject some milk and water down into the nostril, through the canula. At the end of that term, the sore commonly looks clean, the discharge

is so far diminished as to admit of wholly removing the dossil of lint, and the exterior opening is likely to heal with little trouble, by the application only of court-plaster.

BLEEDING *at the* NOSE.

The most frequent cause of spontaneous hæmorrhage is an inflammatory diathesis, and it is mostly produced by an irregular stricture in the vascular system: it generally breaks forth from vessels that are least confined, such as those of the nostrils, lungs, rectum, vagina, uterus, &c. Persons whose viscera are weak and obstructed, are very subject to this kind of hæmorrhage; it is sometimes critical, and originates from an acrid heated bile.

Bleeding at the nose is commonly preceded by quickness of pulse, beatings in the temporal arteries, heaviness in the head, flushings, and a tingling heat in the nostrils. In persons of a relaxed habit, the hæmorrhage is most frequent; and it is most copious in thin bilious costive habits. It is often restrained with difficulty, particularly during the hot months, in young vigorous constitutions, or where the texture of the blood is loose. It frequently proves salutary in the first instance, but when profuse, requires to be checked.

For the relief of this complaint in plethoric habits, it will be proper to draw some blood from the arm, and give a cooling purge or two, of Glauber's salts dissolved in a large portion of water; also to administer nitre in large doses, and such like refrigerants. If it proceed from a loose texture of blood, the bark and elixir of vitriol, tincture of roses, and a few drops of laudanum as a sedative, are most proper. But the principal concern which we have with this kind of hæmorrhage is, to point out the different external applications employed in suppressing it, when violent, and threatening bad consequences.

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The first step towards which is, the frequent use of thick compresses, dipped in cold vinegar and water, with, or without sal ammoniac, or nitre dissolved in it, upon the forehead, nape of the neck, and nose, which have also been thought to answer when applied to the scrotum. Should these not have the desired effect, vinegar, or a slight solution of blue vitriol in infusion of roses may be snuffed up the nostril; dossils of lint may be applied, dipped in the styptic tincture, or the vinegar solution, and rolled in a powder made with bole and an eighth part of blue vitriol, by thrusting the end of it up the nostril, so as to be in contact with the mouth of the bleeding vessel, otherwise the blood will flow by the back nostril; and this may be more easily effected by previously passing a bougie through to the fauces. The following method is said to have been effectual in very obstinate cases. Tie a proper-sized dossil of lint to one end of a piece of strong sewing silk well waxed, then introduce a piece of catgut up the bleeding nostril, through to the back part of the fauces; draw that end out of the mouth, and tie a knot in it, to which fasten the other end of the waxed silk, then withdraw the catgut and silk by the nostril, till the dossil is fixed in the back part of it, after which fill the fore nostril with lint, and the bleeding must be stopped. The lint is not to be taken away for several days; it will be right also to use the vinegar compresses externally.

Tight ligatures, above the knees and elbows, are thought useful, by checking the return of blood from the extremities: the contrary is sometimes practised with success, when the hæmorrhage is thought to proceed from partial stricture, by putting the feet and legs into warm water, in order to relax the spasm, and invite a more equal circulation.

OZÆNA.

DESCRIPTION. This disorder is a foul and malignant ulceration of the pituitary membrane of the nose: it may be distinguished from a common ulceration, by its fœtid stench, and the carious state of the bones. It extends itself into the sinusses of the cranium, and the upper jaw-bones, destroys the septum and other bones of the nose, and erodes its cartilage, greatly disfiguring the patient, and obstructing both speech and respiration.

When it happens in, or penetrates through the cavity of the upper jaw, called *Antrum Highmorianum*, which is immediately over the molares, or grinders; then it is termed *Ozæna in Antro*. The matter, after being retained in that bony sinus for some time, renders that part carious, which lies contiguous to the sockets of the teeth, and forces its way through them, forming fœtid ulcers behind the gums.

CAUSES. It sometimes proceeds from an inveterate catarrh, which seldom happens, except in cachectic habits. It may also be occasioned by injury done to the nose, particularly if the patient labours under a scorbutic or venereal taint. The malignant kind commonly originates from, or is connected with, lues, or scurvy.

CURE. This disorder is seldom to be cured, even in its mildest state, without having recourse to internal means. Mercurials, and decoction of the woods, with the bark, are most likely to succeed; except in the true scurvy, when the bark and antiseptics, as directed under that head, are most proper, and mercurials would be highly injurious. The most effectual external remedies are, injections made with a mild solution of myrrh in barley water, or bark decoction, slightly acidulated with spirit of salt; a weak solution of corrosive sublimate in water,
aqua

aqua sapphirina, or camphorated vitriolic water, properly diluted; and in the worst stage, fumigation with cinnabar, by itself, or joined with the dry gums. In slighter ulcerations, and where fungus is apt to prevail, white cerate, with an eighth part of the red præcipitate, has proved efficacious.

When the disorder penetrates the antrum, extract one or more teeth near the part, and perforate the sockets, if necessary, to give vent to the matter lodged in the sinus. Cleanse the part well with detergent injections, then use those of the astringent and mercurial class, particularly a slight solution of sublimate, or of calomel, in weak lime water. When the complaint is produced from, or complicated with a cachectic, or vitiated habit, administer internal medicines accordingly. The cure cannot be regularly attempted till that is corrected, neither can it be complete, till the carious bones have been removed. A silver, or leaden, canula, is sometimes necessary to preserve the opening, and admit of a free discharge.

Worms have been discharged from this sinus; in such a case it will be proper to inject oil, or a slight infusion of tobacco: and the perforation should be kept open for some time.

A large portion of the maxillary bone, together with three teeth, has been known to separate, from the lodgment of purulent matter in the antrum. A hard painful tumour first appeared on the cheek, down the side of the nose, and in about six weeks, a loose pappy fungus sprouted up on the outside of the gum, just above the first molaris, from which oozed a yellowish matter; abscesses repeatedly formed and burst, and in about a year and a half, a part of the jaw-bone grew loose, and was removed by incision. Detergent injections, and lint dipped in an aqueous solution of myrrh and vitriol, were first applied; afterwards, granulations beginning to form, dry lint was the principal dressing, now and then touching it
with

with blue vitriol, on account of the flesh inclining to be exuberant. The sore gradually filled up, and healed with very little deformity. The bark and elixir of vitriol were liberally administered, from the patient's relaxed state, and apparent tendency to scrofula.

Cancer in the Nose. This disease generally arises about the alæ nasi, or sides of the nostrils, in form of a slight tubercle, or pimple, fungus, or scaly crust, producing induration and tumour, which in process of time ulcerates. The surrounding skin is of a dusky red colour, and the sore is either irregular or hard at the edges, or flat and creeping, according to its first form. For its treatment, vide cancer.

Ulcers of the flat eroding kind, have been perfectly cured by Plunket's arsenical remedy; and in a case of this kind, where extirpation is likely to occasion disagreeable deformity, and the disease is slight, the late Mr. Hunter recommended, as a radical cure, to touch the part slightly and repeatedly with lunar caustic, and cicatrize.

DISORDERS OF THE LIP.

THE HARE LIP.

DESCRIPTION. This is a natural defect in the upper lip, and is thus called from the division, or fissure therein, resembling the lip of a hare. In some, the division is large, and a great part of the lip appears to be defective.


The fissure is single, double, or complicated; the single has one angular point, something like the Roman Λ reversed, except that the sides and points are not regular; the double is more inclined to the form of the letter M; the complicated is when either of the former is attended with a division of the palate on each side, in part, or extending to the back nostrils,

nostrils, and uvula; in which case the latter often proves defective.

The size and irregularity of the fissure is sometimes so great during infancy, as to render the operation precarious. Yet it may be easily performed in a more advanced age. If a tooth or two should awkwardly project into the fissure, extraction will be necessary.

CAUSE. This is one of those complaints whose cause is too intricate to be ascertained.

CURE. The cure is generally performed with the twisted suture, if there be tegument enough, and the division in the roof of the mouth is no objection to the operation; it ought not, however, to be undertaken, where there is no prospect of bringing the edges together. It is to be managed after the following manner:

First separate the frænulum from the gum, with a scalpel, or a pair of sharp-pointed scissors, taking care not to wound the latter; then cut off the edges of the fissures with the scissors, so as to meet in a point beyond the upper part, on both sides, and bring the bleeding lips of the wound, as apposite, and close together as possible, after which pass two or more pins, one after the other, according to the length of the wound, at about half an inch from one outward edge of the sore, and carry them nearly to the bottom of the interior edge; then thrust them in a parallel course onward, through the opposite edge posteriorly, and bring them out at an equal distance anteriorly. The pins ought also to be passed in such number and order, as not to leave any part of the wound gaping. Across and round each of these pins, twist a waxed thread or silk five or six times, after the following form , and place a piece of fine rag or lint, under each end of the pins, to prevent injury to the sound part of the lip.

A pledget

A pledget of lint dipped into a mixture of honey of roses and traumatic balsam, is applied by some, between the inside of the lip and the teeth; but there is but little reason for doing so, except to prevent reunion at the frænum.

A pledget with honey of roses, may be also applied externally, to prevent injury from pressure. Bandage is thought improper, till the pins have been extracted, when that of the uniting kind will be absolutely requisite. The pins are commonly made with silver, tipped with steel points, the latter part of which, when passed, are to be snipped off with a pair of nail clippers. If made of a flat form, a narrow double-headed bandage may be carried round the forehead, over the ears, across the lip, without causing any kind of injury by pressure; at the same time it may be so managed, with the assistance of proper compresses, as to keep the cheek forward, and co-operate with the pins. The union is commonly so firm at the end of six or eight days, as to admit of the threads being divided, and the pins withdrawn; at which time, a slit is to be made in each part of the roller, through which its heads are to be reciprocally passed, in order to form the uniting bandage. The double-hare-lip requires two operations, which should be performed, at least, six weeks distant from each other; and the belly should be kept in proper order, both before and after.

The union of the hare-lip has been formed without the use of the pins, by bringing the lower part of the pared edges even together, with the interrupted suture, an assistant at the time pressing the cheeks forward with his hands, so as to bring the edges in contact; two plaster compresses are then applied on each side of the wound, and slips of adhesive plaster are fixed across: a thick compress is also placed on each cheek, which with the aid of the bandage with slits, before described, may be made to keep the teguments

teguments in a forward position, and to retain the raw edges in close contact.

This mode of uniting the incised edges, is sometimes to be effected without the interrupted suture; but no method of treatment is equally certain with that in which the pins are employed.

CANCERATED LIP.

DESCRIPTION. This complaint is either latent or ulcerated; the first is an indurated, painful, discoloured tumour; the last is when that tumour changes to a foetid spreading ulcer, the edges of which are turned in, and the surface of it has the appearance of a hard compressed fungus: the ulceration sometimes begins with a crack, or a raw-headed pimple. If not timely checked or removed, it will extend itself over the glands of the mouth and fauces, cheek, chin, and neck; destroying the surface of the parts, and producing a hard scirrhus tumour around them, till it either suffocates the patient, or eats through some deep-seated vessel; the hæmorrhage from which soon puts an end to a miserable existence.

In this state of the disorder, the pain excited by the acrid corrosive rheum, which constantly passes over the ulcerated parts, and drains from the glands, together with the foetor of the discharge, are intolerable.

CAUSES. Its causes are generally local, from biting or picking the lip, a blow, puncture, &c. sometimes it arises from a pimple, or a warty tumour, forming a slight excrescence, which seldom proceeds to the scirrhus or cancerous state, except in cachectic habits.

CURE. The curative intention is largely specified under the article Cancer. Excision should not be neglected in its early stage, and should be done with the knife so effectually as not to leave the least diseased, or indurated part behind. The edges
 Q should

should be incised in as strait a direction as possible, and be brought close together and apposite to each other, which may be easily effected, by pressing the lower part of each cheek forward: they are then to be stitched up with the twisted suture, after the manner of the hare-lip, and treated accordingly.

When the ulceration spreads into the mouth and fauces, the patient should be frequently washing them with some bland mucilaginous liquor, particularly before taking any thing. A spoonful or two of the mucilage of quince-seeds, held in the mouth and gradually swallowed, allays the torturing heat; thin fluids rather stimulate.

DISORDERS OF THE TONGUE, FAUCES, UVULA, &c.

CANCERATED CHEEK AND TONGUE.

A cancer is sometimes generated upon the side of the cheek or tongue, from a self-formed pimple, a bite, bruise, or pointed tooth, which should be timely filed, or extracted. Should it not soon yield to the remedies prescribed for the cancer, the whole of the diseased part, if practicable, should be extirpated.

It will not be amiss in this place to mention a complaint which has frequently proved alarming, and may in bad habits degenerate into scirrhus, and cancer. It is a thickness, hardness, and ulceration of the tongue or cheek, from a simple action, which many people have of nibbling and squeezing those parts between the teeth. In a case of this kind, the whole cheek and part of the upper lip became greatly thickened and indurated, and a jagged ulcer formed on the injured part, which spread itself to the tongue. Much had been done without effect; at length it was neglected as an incurable *canker* in the mouth: but by syringing the parts with a mild solution

lution of myrrh, in barley water, softened with a little honey of roses now and then slightly touching the ulcerated parts with the following epithem, and administering a cooling purge or two, the tumour soon abated, and the ulcer healed.

Traumatic balsam and honey, of each one dram, spirit of salt, five or ten drops, Mix. A small portion of this epithem is to be applied now and then, upon the end of a probe or skewer, armed with rag, cotton, or lint.

This application will check the progress of the ulcer in the malignant fore-throat: the quantity of acid must be proportioned to the irritability, or putrescency of the parts.

STRICTURED FRÆNULUM.

The tongue is sometimes confined close to the bottom of the mouth of infants, so as not to give it sufficient play to buckle to the nipple in sucking. If the tongue can be put out of the mouth, the operation will be needless, otherwise it may be set free by dividing the bridle only, with the scalpal or scissars. The tongue is sometimes defective in its office, from a particular thickness and shortness in its make, in which case, the frænulum is more an expanse of membrane: under such circumstances the operation can have no useful effect.

- *Ranula and Calculus.* A tumour or abscess formed near the *venæ ranulares*, which lies conspicuous under the fore part of the tongue, is called *Ranula*. The contents are a tenacious lymph, purulent matter, or stony concrete: it is sometimes quick of growth, at other times remains indolent, and is mostly of the encysted kind. A fleshy excrescence grows sometimes near this part, which if not timely removed, is apt to turn cancerous. An operation near these parts requires great caution, to avoid wounding the

adjacent nerves, and salivary ducts, particularly in young children. The abscess should be opened transversely, and when large, a part of the cyst should be removed. In some cases, it may be as well to wait till the fore breaks of itself, more especially when it lies deep under the middle of the tongue. The stony concrete shews itself through the cyst, and may be let out by incision.

The most proper applications afterwards are, honey of roses alone, or mixed with traumatic balsam, barley water with gum myrrh, and honey of roses, mucilage of quince seed, and the like. In case of hæmorrhage, the part may be repeatedly washed with cold oxycrate, or alum dissolved in water: if profuse, a hot knitting needle, or small cautery properly guarded, may be applied to the mouths of the vessels; under certain circumstances, such means become absolutely necessary.

Ulcerated Palate. Ulcers sometimes happen on the roof of the mouth, and erode the adjacent bones, particularly those of the palate and nose: the speech is much injured, and liquids flow back into the nostrils when the patient is drinking. They mostly proceed from scorbutic acrimony, or venereal taint, and require suitable remedies.

Injections, gargles, and the balsamic epithem, as ordered for disorders of the tongue, are proper: the perforation into the nose frequently remains open, and plates of gold or silver, have been substituted for the loss of bone, with good effect, respecting the voice. Fleishy tubercles and excrescences, sometimes form on this part, and require to be timely removed by excision, for which a curved scalpel, in shape something like a pruning knife, has been found most convenient. Vide, Warner's cases in surgery.

Tumefied and prolapsed Uvula. The Uvula is sometimes so relaxed as to fall down upon the roots of the tongue, it is also subject to swell, and to be greatly elongated; all which complaints create a disagreeable sensation

sensation in the throat, as if some morsel was lodged there for deglutition, and excite a troublesome cough, and hawking, with a stricture in the throat, which seems to threaten suffocation. In phlegmatic and debilitated habits, the velum palati frequently falls with it; in either state, deglutition and respiration are obstructed, and the tone of voice is altered. The uvula is subject to ulceration, more particularly from a venereal cause, and is also much affected, together with the neighbouring parts, in the malignant fore-throat.

The tumour sometimes proceeds from a catarrhus affection, accompanied with heat, redness, and pain in the part itself, as well as in those parts which surround it, which are to be relieved by bleeding, cooling gargles, diaphoretic and nitrous medicines, laxatives, &c. Repeated complaints of this kind produce a thickness, and elongation of the part, and prevent a perfect recovery of its tone and shape.

Sometimes the uvula inclines towards the mouth, and is free from pain or inflammation; indeed, instances have been known of its lying upon the tongue full two inches in length. When it is free from inflammatory symptoms, and continues fallen, astrigent gargles with infusion of roses, decoction of pomegranate bark, port wine, or claret, in which ignited iron has been often quenched, and a moderate solution of alum in water, have proved effectual. A mixture of pepper and honey, applied to the relaxed parts, is a common remedy; and the bark with elixir of vitriol, or tincture of steel, are proper internally.

Should these remedies fail, and the uvula be constantly, or at times, so much elongated, as to impede respiration, deglutition, or speech, a part of it must be snipped off with a pair of scissors, taking hold of it with forceps to prevent slipping. This operation requires some nicety and care, with regard to the portion which should be removed, since taking

off too little, or too much, will fail of good effect. Mr. Sharp advises all but half an inch to be extirpated, but perhaps; in some cases it may be going too far, with respect to the voice. The hæmorrhage may mostly be restrained, by gargling with cold vinegar and water, a little stiptic powder applied at the end of a spoon, or even the actual cautery properly guarded, if necessary. When venereal taint, or the malignant angina, are the causes, suitable remedies should be administered.

When the uvula is only elongated, abscission may be safely performed; but when it is much increased in bulk, the ligature is recommended, as being most secure from hæmorrhage. This operation, whether performed by ligature or abscission, requires to have the mouth fixed open. Should ligature be chosen, it may be fastened upon the part by the fingers, and be tightened with the aid of the tube mentioned under the article polypus, by the ligament and instrument recommended by Mr. Cheselden for the removal of the indurated and enlarged tonsil, or by Hildanus's Ring.

DISEASED GUMS AND TEETH.

Lancing the Gums. Infants suffer great pain, and are extremely liable to convulsions, from cutting the teeth. The gums inflame and swell, consequently grow too thick and tough to be pierced by the teeth without great pain, and irritation of the whole system: in all such cases, a transverse or crucial incision, down to the tooth, is necessary. Cutting or scarifying the gums, gives relief to rheumatic pain, which frequently affects them and the covering membrane of the jaw and sockets of the teeth. The gums are subject to little eroding ulcers, and sponginess, which commonly arise from scorbutic acrimony, or a collection of tartar, as it is called; and are to be remedied

remedied by restringent dentifrices, and the bark with antiseptics.

Abscesses, and fleshy Excrescences also form on the gums; the abscess is generally attended with great pain, quickly suppurates, and bursts; when deep-seated, they should be opened in due time to prevent caries in the subjacent bone. These sores are indiscriminately termed gum-boils, though they sometimes originate in the periosteum and the sockets of the teeth. Emollient poultices applied externally, and roasted figs retained sometime opposite to the part affected, will forward maturation: in the latter case, extraction of a tooth becomes necessary. Excrescences are to be treated according to the directions already laid down for complaints of like nature in other parts.

ON THE TEETH.

The business of looking after the teeth is too much neglected by the regular-bred surgeon in the country. In every metropolis throughout the more refined parts of the world, we find it taken up as a distinct profession; and those gentlemen who follow it, are pretty well convinced of its utility; but this employment cannot answer separately in the more diffused parts, on which account it may be reasonably united with the surgical branch. There can be no doubt that the surgeon who is well qualified in his profession, may, by a particular attention to the structure and diseases of the teeth, soon become an expert dentist; at least, be fully acquainted with the more necessary parts of that branch. It is therefore recommended to every young surgeon, to acquaint himself with the minutiae as well as the practical part of it, previous to his leaving the hospital.

The most useful books to be consulted upon the occasion, are those written by Mr. John Hunter, and Mr. Beardmore, which with a three weeks

course of lectures, will be sufficient groundwork to proceed upon.

The difficulties of the operative part, are easily to be conquered by practice, and the most necessary instruments for that purpose are, the scalprum, to remove the tartareous crust with, the rasp or file, to take off angular points, a gum lancet, and those for extracting teeth.

Rational objections are made to the frequent use of dentifrices, when composed of hard substances, and mineral acids; notwithstanding which, experience proves, that such remedies properly prepared, are extremely useful towards removing the tartar or discolouration from the teeth, as well as healing and constringing the loose ulcerated receding gums. As soon as the crust and blackness have been removed, those remedies should be only now and then repeated, to keep the teeth in order, and give firmness to the gums. If the latter are much affected from a loose crisis of blood, the bark and other antiseptics must be administered internally.

The following dentifrice is known to have recovered teeth that were extremely, loose, discoloured, and loaded with tartar, and fungous ulcerated gums that were worn down and excessively offensive, without leaving the teeth so tender as they generally are after scaling:

Armenian bole and cream of tartar, each half an ounce; powdered cinnamon, one dram, pure honey, two ounces, acid of vitriol, a sufficient quantity to give a slight acidity.

Persevering in the use of this dentifrice every other day, has gradually produced all the good effects of scaling: when a part of the tartar is removed, the mouth should be washed with warm water after each meal, and after the use of the dentifrice. Frequent use of the mallow root, or a little water

water just warm, will in some cases be sufficient to prevent future incrustation.

Scaling the Teeth. When scaling is required, the point of the scalprum, which is an instrument made of steel and somewhat like a graver, is to be applied to the teeth, close to the edge of the gums, with a degree of pressure equal to separating the yellow or blackish crust, by picking it upwards; at which time the teeth when loose, must be supported, by placing the fingers of the other hand behind them; the point of the scalprum may also be employed in lightly scraping the tooth, when care should be taken not to wound the gums.

Hollow and decayed Teeth. When the tooth is carious, it will give great pain, and tend to injure the neighbouring teeth; for which extraction is the best remedy. With those who have not sufficient resolution to undergo the operation, first cleanse the cavity, then fill it up with wax, mastich, lead, or gold, or cauterize the interior part of it: both these means will sometimes preserve the tooth from foulness, pain, and future decay. Oil of cloves and origanum, or thebaic tincture dropped upon lint or cotton, or about half a grain of opium placed in the hollow, will give temporary relief. Some apply a blister behind the ear, or submit to boring the antihelix with a red-hot knitting-pin, or cauterizing the hollow part of the tooth, and apply emollient cataplasms externally. Leeches also are applied.

The operation of extracting the tooth is much easier to be learnt by observation and practice, than by written description. Various instruments have been invented for that purpose; the key with a deep shoulder, and claws of different sizes, for the side teeth, the pelican for those in front, and the punch for stumps, are the instruments most in use.

DISORDERS OF THE TONSILS.

Inflamed Tonsils. If the inflammation on these parts be so great as to threaten suffocation, or gangrene, no one thing is so likely to give relief as scarification; more especially when common means have been used without success. Steaming, or syringing also with warm water and honey of roses, is of great use. The scarificator with a moveable point and blade, and a proper guard, is most convenient for the purpose.

Abscess in the Tonsils. When the tonsils proceed to suppuration, it should be forwarded by repeated application of the emollient poultice externally, and a sufficient opening should be made as soon as matter appears to be formed.

The glands are subject to grow large, and to be indurated, but seldom prove scirrhus. If after the use of astringent gargles and an alterative course, they should be so enlarged as to impede respiration or deglutition, the only remedy is extirpation. Caustic, and the knife, were formerly employed for that purpose; but the one is tedious, and requires nice management, and the other has been attended with profuse, and even fatal hæmorrhage: ligature therefore is safest and best.

When the base of the tonsil is smaller than the front, the ligature may be passed round it with the assistance of an eye probe, properly curved and fixed in a handle; if broad at the basis, it must be perforated at the bottom part, by the needle with an eye at the end, as invented and directed by Mr. Cheselden; armed with two proper sized ligatures, one end of each to be drawn out of the needle's eye on its further side, by means of a hook. The needle being bereft of its threads and withdrawn, and the ends all brought together on the outside of the mouth, the ligatures, each with its fellow end, are

are to be tied strait, one at a time, with the aid of an instrument contrived by that eminent surgeon, for the purpose of slipping the knot up to the part where it is to be fastened: which is done, by passing the end of the ligature, held out of the mouth from the first, through the circular hole, or ring at its end, and carrying the instrument along the ligature near to its middle part: the string is then to be thrust by it, beyond the tonsil, and held in firm resistance with one hand, whilst the other retains and draws it on the outside of the mouth. The double ligature must be drawn forwards and divided properly, so that one part be tied above the tonsil, the other below it, making a double knot to each, and cutting the remainder off pretty near to it. The separation commonly takes place in three or four days, unless the ligatures get loose, if so the operation must be repeated.

The method recommended for the extirpation of polypous excrescences in the throat, is said to have succeeded, where the tonsils required removal. The double tube used on the occasion, is ordered to be properly curved towards its upper end.

DISORDERS IN THE NECK AND THROAT.

TUMOURS IN THE NECK.

Such complaints frequently affect this part, but differ much in their nature and quality, being either strumous, encysted, or scirrhus.

The strumous, or scrofulous tumour is mostly seated about the lower jaw and the parotid, or salivary glands, and sometimes turns scirrhus, but more commonly tends to suppuration, or resolution.

The encysted tumour is formed in the cellular and adipose membrane, either immediately under the cutis, or in the interstices of the muscles. It is
tense

tense or soft, round or irregular, and sometimes deep-seated and extensive, particularly that of the steatomatous kind.

The scirrhus tumour is generally seated in the course of the lymphatics, and close to the jugular vein; is detached from the muscles or skin, moveable, and without pain. Swellings of this kind, which adhered to the vein itself, have been successfully dissected away, but such operations require the greatest skill, steadiness, and dexterity.

The scirrhus tumour, which is of a stony hardness, round or oval, with a jagged edge, or irregular protuberances, and attended with darting cutting pains, is very likely to degenerate into cancer, which disease commonly makes a rapid progress in these parts.

All these tumours are to be treated as directed under their general heads, according to their different states. Great care and circumspection are required in extirpating them, on account of the numerous and large branches of arteries which are irregularly scattered about the neck; particularly those swellings that are deep-seated. It will therefore be prudent, in such a hazardous situation, to leave a part of the tumour untouched, which will frequently digest away, or may sometimes be safely destroyed by means of slight and frequent applications of the lunar caustic. When tumours of this kind are almost entirely removed, the wound may be healed by adhesion.

We are told of deep-seated vessels being wounded, and that the hæmorrhage has been suppressed with a body of lint and styptics, together with thick compress, and constant pressure with the hand, for several nights and days, where the tenaculum, or needle and ligature, could not be effectually used: but trusting to such means, when the hæmorrhage is profuse, is exceedingly dangerous, both to the credit of the operator, and what is of much greater concern,

concern, the very life of his patient. The distress of both parties might perhaps be prevented, by making the division of the teguments sufficiently extensive to afford room to get at the vessels, and secure them by ligature. Yet the deeper seated wounds in the neck are certainly cases of difficulty and danger; and when the injured vessel is so hidden and dangerously situated as to prevent the use of the needle and ligature, the best substitute is the sponge, to be applied after the manner already described under the article *Complicated Wound*; assisted by a regular succession of compresses, bandage, and constant pressure with the hand, if bandage cannot be made sufficiently tight.

Should the salivary ducts be divided in extirpating a tumour formed in the cheek, or near the jaw, lint, or compress dry, or moistened with an astringent lotion, together with proper bandage, will sometimes be sufficient towards restraining the salivary discharge, and healing the part; otherwise it may be necessary to perforate the fore into the mouth. For the after-treatment, see each kind of tumour under its proper denomination, and Scirrhus Breast.

WRY NECK.

Some surprizing instances are related by one or two German authors, of young people who were afflicted with this complaint from their birth, being cured of it at different ages; notwithstanding which the operation is seldom performed.

The distortion may proceed from accident by burn or scald, from spasmodic or rheumatic affection, from weakness in the opposite muscles, and defluxion; or may exist from birth. When the latter is the case, all the muscles must be inevitably affected, and the vertebræ generally partake of the distortion; on which account, it will be impossible to restore the head to its natural position. What credit

credit then ought to be given to contrary accounts? Mr. Sharpe, and other eminent men, declined the operation, except where the mastoideus muscle only was affected.

If the distortion be recent, and arise from cold or inflammation, bleeding, sudorifics, and gentle evacuants, with discutient and emollient applications, will prove effective. If from spasmodic or rheumatic affection, thebaic tincture, with antimonial or ipecacuanha wine, or volatile tincture of guaiacum, are the most proper remedies; the volatile soap, liniment with laudanum, and the like, may be useful externally.

Should it originate from irregular cicatrix after burn or scald, or any other accident affecting the teguments, the contracted parts must be released by transverse incisions, cautiously made, for fear of wounding the jugular vein.

When it proceeds from a contraction of the mastoid muscle only, the operation is likely to be attended with success, and may be done after the following manner with the crooked scalpel, or the instrument contrived for that purpose called a probe-razor.

The patient being placed on a table in the most convenient posture, make a transverse incision through the integuments, rather beyond the breadth of the muscle, with the scalpel, and distant about one third of the length of the muscle from the clavicle; then pass the probe razor close under the muscle, and carry it outwards and upwards on the opposite side, so as totally to divide the muscle, which, by proper management, may be done without injuring any considerable vessel. The wound must be filled up with dry lint, the edges kept asunder, and the head fixed upright. Some advise the dividing bandage; but the principal thing necessary, is to keep the head fixed in an erect posture, which may be done most compleatly by means of a curved

curved plate of iron fixed at each end of a long intermediate stem, which last must be sufficiently bent forward towards the upper curved transverse plate, for the more easy lodgment of the neck: the inferior transverse plate ought to be proportionately curved, and should be made to reach along the collar bone, to the point at each end, where it nearly approaches the shoulder.

Dr. Hunter advised making the incision at the lower part of the muscle, on account of the cellular membrane being less in proportion near that part.

BRONCHOCELE.

DESCRIPTION. Writers, both ancient and modern, have been much mistaken with respect to the nature and seat of this tumour; having differently considered it, as being encysted, adipose, aneurismal, and strumous; their treatment of it also has been equally erroneous. Mr. Wilmer, in his useful book of cases, having fully confuted their vague opinions.

This disorder has its seat in the thyroid gland, and principally shews itself at the anterior and lateral part of the neck. It is sometimes soft and moveable, at other times hard and immoveable, increasing to an enormous size, and pressing so forcibly against the vessels and nerves of the neck, as to occasion a kind of stupidity; which compression is also the cause of a throbbing pulse in the carotids, that gives it the suspicious type of an aneurism. The bronchocele is sometimes accompanied with strumous affection of the neighbouring glands, but is supposed to be entirely independent of such obstructions. It is certainly endemial in some countries, more particularly those that are mountainous: for instance, it is so frequent in Derbyshire, as to acquire the title of the *Derby Neck*; and the inhabitants of the Alps and Glaciers, are particularly subject

ject to it, with whom it has the appellation of *Goitre*.

CAUSES. Some peculiarities in the air, soil, and waters, have been considered as causes of its being endemic; lifting heavy weights, and great stress on the parts, have also been supposed to produce this disorder; but vain is conjecture, till the use of the thyroid gland is better understood.

From the nature and situation of the thyroid gland, particularly in its enlarged state, when the size of its vessels are greatly increased, little can be said in favour of extirpation. We are informed by respectable authority, that such attempts with the knife have been attended with dangerous, and even fatal hæmorrhage; and from its nature and extent in the morbid state, a radical cure is hardly to be expected from either ligature or caustic.

Internal means alone then are chiefly depended upon in this extraordinary complaint: presuming therefore upon the philanthropic wish of the worthy gentleman before-mentioned, who has ingenuously disclosed the mode of cure, which from lucrative motives had been so long concealed by others; the author has taken the liberty to transcribe the two receipts, the remarks respecting the equality of their powers, the particular injunctions in administering them, and the circumstances under which they are, or are not, likely to succeed. At the same time, he has subjoined a process which was perfectly successful in a tumour of the same kind.

NUMBER I.

“ The day after the moon hath been in the full,
 “ the patient is to take a vomit; - on the succeeding
 “ day, a purge is to be administered. On the third
 “ night, going to bed, one of the bolusses is to be
 “ placed in the mouth, under the tongue, and be-
 “ ing suffered to dissolve gradually, - is to be swal-
 “ lowed.

“ lowed. This bole is to be repeated the six suc-
 “ ceeding nights.

“ Calcined sponge, cork calcined, and pumice
 “ stone burnt, of each ten grains; to be sepa-
 “ rately powdered, and made into a bole with
 “ syrup, honey, or mucilage.

“ On each of the seven days that the patient
 “ takes this bole, the following powder is to be
 “ administered in the forenoon, in a proper ve-
 “ hicle.

“ Chamomile flowers, gentian root, and the
 “ tops of the lesser centaury, of each, in
 “ powder, five grains.

“ On the eighth day the purge is to be repeated;
 “ in the wane of the succeeding moon, the same
 “ process is to be entered into, and repeated a third
 “ time, unless the disease is cured before. The
 “ vomit is only to be taken before the first course
 “ of medicines.

NUMBER II.

“ Calcined sponge half a dram, and honey a
 “ sufficient quantity to make a bole.

THE PREPARATION.

“ Tie the sponge up hard with wet packthread,
 “ and calcine it in a crucible.

“ These boles are to be used as those of the
 “ former receipts. The bitter powders are to be
 “ taken, and the same directions, with regard to
 “ evacuation, observed in every respect as No. I.
 “ A very eminent surgeon who hath had many op-
 “ portunities of seeing the good effects of both these
 “ preparations, assures me, that either of them will
 “ succeed with more certainty, if the patient takes

R

“ a purge

“ a purge and vomit during the increase of the
 “ moon. Some parts of these directions seem to
 “ bear the character of empiricism; but where no
 “ harm can possibly arise from, nor any inconve-
 “ nience follow their use, it is to be wished, that
 “ those who think proper to give either of the pre-
 “ ceeding methods a trial, will do it in the manner
 “ recommended. It seems highly probable that the
 “ chief virtue of the bole consists in the sponge.

“ The calcined sponge for either of our prepara-
 “ tions, is carefully powdered in a glass, or marble
 “ mortar; if a brass one is used, the salts of the
 “ sponge may attract so much of the metal as to
 “ give it an emetic property.

“ If the bronchocele is not very large, hard, or
 “ of long date; if the patient is a female, young,
 “ or not past thirty, I believe it will give way to
 “ the treatment just described; but if the patient is
 “ a man, or of either sex past the meridian of life,
 “ I fear, that in direct opposition to the Coventry,
 “ or any other receipt, the bronchocele will still
 “ remain one of the opprobria medicorum.”

An obstinate swelling of this kind, of five year's standing, in a young woman about twenty years of age, was a few years since removed by persevering about seven weeks in the following remedy; she rubbed a scruple of strong mercurial ointment into the part every other night, and took a proper purge, with jalap corrected with ginger, once in six days.

Calcined sponge, half a dram; powdered root of rhubarb three grains. Mix.

This powder was taken every morning and evening, in a cup of cheese whey, except those days on which the purging powder was taken.

TRACHOTOMY.

Or what is erroneously called Bronchotomy, is an operation which is very seldom ventured upon in this country, yet absolutely necessary in certain cases that threaten suffocation. A few German and French surgeons are said to have performed it with success. Heister tells us, that by this operation, he happily extracted a piece of boiled mushroom from the larynx of a person who was in immediate danger of suffocation; but forgetting his usual candour, he too rashly condemns those who decline performing the operation, and too boldly pronounces it safe, easy, and salutary.

The principal occasions on which it is recommended are, when any hard body is firmly fixed in the trachea, or in the upper part of the œsophagus, and threatens immediate suffocation; or, in order to inflate the lungs of a person nearly suffocated by constriction of the glottis, or superior part of the larynx, particularly from drowning; observing to stop the nostrils, and forcibly blow breath into the lungs through the orifice; or, when indurated swellings obstruct the fauces, which can neither be brought to suppuration, nor dispersed. In cases that will admit of deliberation, it would be prudent to consult with some person skilled in the profession, before the business is determined upon. The operation may be performed as follows:

The patient being placed conveniently on a table, and properly secured with his head leaning back, a longitudinal incision is to be made in front through the teguments, a little below the thyroid cartilage, and an inch or more in extent downwards: the muscles being separated, and the bleeding stopped by tenaculum and ligature, if necessary, the edges are to be drawn asunder, and a transverse incision is to be made cautiously with a lancet or scalpel, be-

tween the cartilaginous rings, into which a silver canula should be introduced of about an inch in length, and made rather depressed and curved, which is to be passed through three or four bits of thin linen rag, ready perforated in the middle, on which the rim of the canula is to rest; and which pieces may be occasionally cut away in case the part should swell; being intended for no other purpose than keeping the canula at nearly the same depth in the trachea. A double canula, well fitted, is preferable to the single one, as it is very apt to be filled with mucus, and does not so readily admit of being occasionally cleansed and replaced. When the part has been kept open a sufficient time to answer the intent, the canula may be withdrawn. The orifice will soon heal with superficial dressing, as mentioned in the cure of wounds of this part.

A more ready and easy method may answer the purpose as well, by passing a triangular or flat trocar with a canula of proper size, and limited to a proper length, into the middle of the trachea, between the rings, without previous incision. A piece of fine muslin is recommended to be placed over the external orifice of the canula, to prevent dust getting in.

OBSTRUCTIONS IN THE ŒSOPHAGUS.

It often happens that solid food, or some other substance, makes a lodgment in the œsophagus, or gullet; the mode of removing which will depend upon its nature and situation. If the substance be near the fauces, it may be extracted; if deeper in the gullet, it must be pushed downwards.

When the substance is hard and pointed, its removal has been effected by forcibly swallowing a draught of some liquid, or a crust of bread, after it had been well chewed: repeated strokes with the hand between the shoulders, and pressure of the throat

throat below the obstructed part, have also proved effectual. Should these means fail, it may be thrust down with the probang, an instrument made with a long piece of whalebone, and tipped with sponge, or by a small wax candle made pliable.

Fish, and other bones, needles, and such-like substances, have been removed after the same manner; but provided respiration and deglutition are not dangerously impeded, it will be more prudent to let them remain in the passage, than try to force them downwards, for fear of striking them deeper, and doing greater injury: besides, the extraneous body has a chance of being set free by partial dissolution, or suppuration in the part where it lodges.

In desperate cases, when suffocation is likely to ensue, œsophagotomy is recommended. Two cases are mentioned in the Paris Memoirs wherein it proved successful. This operation may be performed by making an incision near the obstruction, about two inches in length, through the cutis and cellular membrane, close to the trachea; then holding the muscles and thyroid gland on one side, whilst the trachea is drawn to the other, so that the gullet may be seen and the substance felt, a longitudinal incision of fit size is to be made into the part near it, and the morsel is to be extracted with pliers, or small forceps. The wound should be treated after the method already described, and nutriment for some time must be given by glyster, afterwards, thin nutritious diet in small quantities by the mouth.

The business of œsophagotomy is one of those possible operations, which, from the future eventful process, promises little security to the patient, and no great credit to the surgeon.

DISORDERS OF THE THORAX.

PARACENTESIS.

By which word is meant a perforation into either of the cavities for the discharge of water, blood, air, or matter.

The general effects of either of these fluids being collected in the chest, are, great difficulty in breathing, a sense of weight and fulness in the thorax, a feeble and irregular pulse, incapability of lying upon the unaffected side, together with restlessness and interrupted sleeps. There are also certain symptoms annexed to each of these complaints, by which they may be easily distinguished from each other, and be more clearly ascertained.

Water in the Chest. This complaint may be general or local, on one side or on both; and takes its rise from a morbid increase of exhaled lymph. It has sometimes its particular lodgment in the duplicature of the mediastinum, and in the pericardium.

The symptoms which are peculiar to the hydrops thoracis, are, a sense of water undulating in the chest from sudden jerks, or rising quickly from a horizontal posture; motion of the fluid is also to be perceived by holding one hand flat against one side of the chest, and striking the opposite side with the other; a dry cough, a quick weak oppressed pulse, palpitation, a small discharge of urine, and a sudden revulsion or dispersion of swelling in the legs or feet.

When the mediastinum is particularly affected, the patient feels a weight at the sternum, which obliges him to stoop forward when he stands up, or walks. If the pericardium only be affected, the
oppressive

oppressive feel is more in the middle and left side of the chest, and an undulatory motion is said to be perceived at each stroke of the heart.

When these marks appear, attended with the general symptoms in violent degree, the operation is thought to be necessary; but this business is not always so clear as to be free from mistake; it is therefore necessary to attend to the nature of the habit. If anasarcaous, the disorder in the chest is most likely to be relieved by punctures in the ankles, or a small blister in the thigh; if complicated with ascites, the operation can be of little or no use; in fact, it ought not to be performed unless the fluid is confined to the chest. Before the operation is concluded upon, the strength of the patient should be duly considered, for in weak habits, and where the quantity of fluid collected is great, it would be better not to draw off the whole at once.

When the existence of the water is ascertained, and the perforation is necessarily determined upon, it is always safer to perform it cautiously with the scalpel, than with the trocar, from a probability of the lungs adhering to the pleura. It should be done after the following manner:

The patient being conveniently seated, or laid on a bed in a horizontal posture, an incision, not less than two inches in length, is to be made in the course of the ribs, through the integuments, between the sixth and seventh rib, nearest to the superior edge of the lower rib, for fear of wounding the intercostal artery, which generally lies in a groove at the lower edge of the superior rib; then gradually shortening the wound, and dissecting through the intercostal muscles, down to the pleura, cautiously divide that membrane about an inch in length, and as soon as the water rushes out, introduce a short silver canula, which may be closed occasionally.

If an adhesion appears at the opening, and no fluid passes, another may be made nearer to the

sternum, or a rib or two higher, or lower. Some judicious practitioners have directed the skin to be retracted upwards by an assistant, previous to making the incision, and to be returned over the division of the pleura, after the exit of the fluid, in order to prevent the entrance of the external air into the cavity. This precaution having been neglected in several instances of the empyema without inconvenience, shews it to be unnecessary when one side of the chest only is concerned; perhaps this provision may be more necessary where perforation is to be made on both sides.

The whole of the fluid may be drained off by placing the patient in a horizontal posture, and making the opening in the most depending part. The operation being finished, a pledget is to be applied over the wound, with a soft compress, and retentive bandage; internal medicines, as on other like occasions.

It has been recommended to perforate the pericardium with the trocar, and to trepan the sternum in order to pass that instrument into the mediastinum, when water is lodged in either of those parts. The first of these operations is too bold a push to be made without absolute authority; the last might be done with safety, but stands in need of the most positive evidence that the fluid exists in the part, before it is put in practice. The operation of paracentesis is not therefore likely to be rashly attempted for the hydrops pericardii, and mediastini.

Blood in the Chest. In this case the general symptoms are more oppressive than in the preceding, and the indications are more overt, part of the blood being thrown up by coughing. The causes are, wounds, bruises, fractures in the bones of the thorax, erosions, and ruptures of the vessels from violent exertion, &c.

If the collection be great from an external wound, the opening should be enlarged, provided the vital functions

functions be greatly impeded. Mr. Sharp, and other eminent men in the profession, have advised waiting for the blood to be absorbed, and coughed up. Heister, and others, recommend an opening to be made as before directed, and tepid water to be warily injected, in order to dilute the coagulated blood.

Should a ruptured or injured artery of some size be the cause of the collection, and the action of the lungs and heart be vehemently obstructed, so as to endanger the patient's life, it is not likely that any kind of operation would succeed; and in less momentous cases, the vital functions may not be so far impaired as to prevent the salutary effects of bleeding, medicines, rest, and regimen, or set aside the more respectable efforts of nature.—Vide Wounds in the Chest.

Air in the Chest. When air passes from the lungs into either of the cavities, it soon proceeds to an alarming height. This collection may originate from injury done to the membrane which invests the lungs, by violent exertion, erosion, or fractured bones of the thorax, which last is the most frequent cause; the air collecting in such quantity as to destroy respiration, and the pulsation of the heart; sometimes forcing its way into the cellular membrane, and diffusing itself all over the body. This emphysematous swelling is known from any other kind by a crackling and elastic feel, upon friction or pressure.

In such a case, it will be proper to make several long incisions into the cellular membrane, and to endeavour to press the air through them. Should this, and the other means noticed under the article, *Emphysema*, prove ineffectual, the perforation must be made through the pleura, after the manner prescribed in the hydrothorax, near to the injured part, if not too near the vertebræ, or too low down; when it will be right to make the opening between the seventh and eighth rib, about half way from the
breast

breast and back bone, for fear of injuring the intercostal artery, or the diaphragm. Hard compresses placed upon the ends of the rib, and over the tumour, with the napkin bandage repeatedly tightened, have proved successful. *Vide Fractured Rib.*

Matter in the Chest, or Empyema. This collection is generally preceded by such symptoms as leave no room to doubt its existence. It seldom happens without previous inflammation, fixed pain, rigor, cough, purulent expectoration, and inability to lie on one or on either side, in case pus is contained in both cavities: there also generally appears a kind of œdematous swelling externally, where nature points for evacuation. The matter generally forms between the lungs and pleura, which, if not timely discharged, brings on oppressive symptoms, erodes the lungs, diaphragm, ribs, &c. and produces a marasmus.

If there be no natural indication externally, expectoration be stopped, and the oppressive symptoms increase, the operation becomes necessary, and should be performed in the foregoing method and place, except that the incision in the pleura should be generally longer. A tent is here absolutely necessary, and the best kind is that made with a long flat doubled piece of fine linen rag, with a piece of thread fastened to its middle, and passed round the bandage; which rag must be renewed daily, and should be proportioned to the size of the fore; a pledget, soft absorbing compress, and retentive bandage are the further necessities.

Abscesses have been known to form between the pleura and ribs, and to make their way externally; which, by being in due time opened with the lancet, and kept so with the linen tent till the discharge became trifling, have done well. The bark and chalybeates, or vitriolic medicines, milk diet, and proper regimen, are necessary restoratives under

such discharges. In two cases of this kind which did perfectly well, the openings were made where nature pointed; one above the sixth rib near to the sternum, the other between the sixth and seventh rib near to the back-bone.

PARACENTESIS OF THE ABDOMEN.

This operation is performed in that kind of dropsy called *Ascites*: prior to its performance, it will be proper to search after the following marks and distinctions, in order to ascertain the existence of the disease, and the propriety of the operation.

DESCRIPTION. The most convincing proofs of a diffused ascites are, an equal and uncircumscribed tumour of the abdomen; great sense of weight and tightness therein; undulation of the fluid, which is to be felt by placing the palm of one hand flat against one side of the body, and striking smartly on the opposite side with the other hand; a dry cough and skin: dyspnœa, particularly in a recumbent posture; great thirst, and paucity of urine; with meagerness and paleness in the superior parts and face.

Sometimes the fluid is contained in cysts of various sizes, and in vesicles called *Hydatids*, in which cases the fluctuation is not so easily felt, and the tumour is rather unequal. This is also the case when it is partially collected in the ovarium; which is also to be distinguished by the site, hardness, and irregularity of the swelling, by being attended with little or no dyspnœa or cough, and with less degree of weakness than when the fluid is diffused throughout the cavity. The dropsy of the ovarium is sometimes complicated with ascites.

Pregnancy is to be distinguished from ascites, by fullness and firmness of the breasts, and the dilatation of the os uteri; besides which the thirst is seldom so great,

great, the urine so sparing, or the superior parts so emaciated as in ascites.

The fluctuation, without perceiving which it would be hazardous to operate, is less in degree, in proportion to the viscosity of the fluid, or the fullness and tightness of the teguments. The operation is seldom proper when the ascites is mixed with anasarca; punctures on the legs and ankles are then by far more likely to prove serviceable.

When air is collected in the cavity of the abdomen, it is called *Tympanites*. It generally originates in the larger intestines, and sometimes makes its way through a small opening into the cavity. This complaint is easily to be distinguished from the watery tumour, by its tense feel, hollow drum-like sound, and want of fluctuation.

CAUSES. The ascites proceeds from debility in the system, and want of energy in the inhalent and exhalent vessels of the abdominal cavity: also, from obstructions, and the weakened or scirrhus state of the mesenteric glands, the liver, or some other viscus.

The tympanites generally proceeds from weakness in the contractile power of the intestines, particularly of the colon, which is known to allow of wonderful distension. For an instance of which distensive power, vide the Case of a Scirrhus-contracted Rectum, Lond. Med. Memoirs, vol. 4.

When the common course of medicines has not the desired effect, recourse is had to perforation or tapping. It is probable that the operation would be less likely to fail, were it not deferred so long as it commonly is: for, as soon as fluctuation is fully and plainly perceived, little is to be expected from the use of other means, previous to tapping; which operation is to be performed after the following manner.

The patient placed conveniently in a chair, or on the side of a bed, is to press his hands close clasped together,

together, upon the epigastric region; or, an assistant may keep a constant pressure on the upper part of the abdomen, by means of a broad linen cloth perforated or not in the middle, which compression is to be gradually increased as the water is discharging, to prevent fainting.

The surgeon having dipped the end of the trocar with its canula into oil, stabs it suddenly, or pushes it gradually, and with proper force, straight forward into the abdomen, at equal distance from the navel and the middle part of the spine of the ileum, or hip-bone, so as to introduce the canula also; which he will perceive to be done by losing the extra resistance arising from the silver edge of the latter; he then withdraws the perforator, and leaves the canula, through which the fluid is to pass off; all which may be done without hazard to the intestines. In the course of the evacuation, the end of the canula is sometimes obstructed by a part of the omentum or intestine, which may be readily pushed back with the blunt end of the probe.

When the fluid is drawn off, and the canula removed, a pledget of dry lint and plaster is all the dressing necessary to the wound, over which a large compress, dipped in brandy, should be applied; and the pressure must be continued, by means of a flannel roller seven or eight yards long, and about five inches broad, which bandage is to be continued from the bottom of the belly gradually upwards, for the support of the intestines and diaphragm. The compress and bandage may be daily renewed after the second or third day, for a time. This operation may also be performed, in the dropsy of the ovarium; which commonly makes its appearance more on one side of the body, unless it has burst into the cavity of the abdomen, or is joined with an ascites. This disease is mostly encysted, and has sometimes required more than one puncture.

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The place where the operation for the ascites is usually performed is not unexceptionable; the thickness of the teguments may prevent an accurate perception of any subjacent or adhering viscus; besides, the epigastric artery may sometimes be brought so near the part which is commonly punctured, as to render the operation dangerous—and persons have been carried off by fever and other consequences of peritoneal inflammation.

The worthy president of the Medical Society, Dr. James Sims, having witnessed a few disastrous events from one or other of the foregoing causes, earnestly recommends an entire change of place for the operation, and points out the umbilicus as a safer part, by puncture of a common lancet. The orifice is not required to be large, and the fluid should be allowed to come away without extraordinary pressure, agreeably to the contraction of the integuments.

The paracentesis was formerly practised to discharge the air in the tympanites; but it is an expedient of too dangerous a nature to attempt.

It was the practice also, till of late years, to draw off a part of the fluid only at one time, for fear the patient should sink, from losing the pressure of the fluid on the large vessels too hastily; but there is no danger in evacuating the whole, provided proportional weight or pressure be maintained during the time of, or after the operation. The encysted dropsy has been known to require more than one puncture; but when the vesicles are small, no good can be expected from the operation.

After the water has been completely evacuated, and every medical attempt to restore the parts to their proper energy and tone, has proved ineffectual, the operation may be again and again performed. More instances than one or two are authentically recorded, of persons having been tapped once a month for several years together; and of others that have had
longer

longer intervals, and felt no great inconvenience, till near the usual time of requiring the operation.

The two following instances are most remarkable, both which seem to have originated in the ovarium: the one is that mentioned by Dr. Mead, in his *Monita et Præcepta, de Hydrope*, of Dame Mary Page, as recorded in Bunhill-fields, who died in the 66th year of her age, was tapped 66 times in 67 months, and had taken away 240 gallons, or 1920 pints of water.

The other case is that communicated to the Royal Society, by Mr. Martineau, of Norwich; in which the disease first manifested itself after a miscarriage, in the 27th year of the woman's age. She was first tapped in 1757, and had recourse to the operation three or four times in the year, till her death, which happened in 1783; in which space of time, she is said to have had the operation performed 80 times, and in the whole to have lost 828 gallons and seven pints, or 6631 pints of water. Upon dissection, the left ovary was found to be so enlarged as to form an immense pouch, and the peritonæum was greatly thickened, and in some parts ossified.

INFLAMMATION OF THE LIVER.

DESCRIPTION. This viscus is seldom thus affected in temperate climates, but is frequently so between the tropics. The symptoms are, a dull pain and tension in the region of the liver, sometimes darting towards the shoulder and clavicle; nausea and vomiting, loss of strength, frequent shiverings, and dimness of sight; laborious breathing, watching, costiveness; and the eyes, skin, and urine are commonly tinged with yellow.

Should suppuration ensue, the symptoms increase with languor, the region of the liver grows more and

and more tense, repeated rigors come on, and the pain particularly strikes up the right side to the top of the shoulder. A fluctuation is sometimes to be felt through the teguments, and they are partially œdematous.

CAUSES. An acrid or heated state of bile, obstructed biliary ducts, from heat of climate or an inflammatory diathesis, and external violence.

CURE. In the early part of the disease, bleeding both general and local, agreeable to the state of the blood and strength of the patient, and mercurial friction; the bowels should be kept moderately lax with milk whey, or cooling emulsions with neutral salts, and a diaphoresis should be promoted, by means of the opiate tincture, and ipecacuanha or antimonial wine; repeated small doses of opium will also be found necessary.

When the inflammatory symptoms are rather abated, more especially if the hardness and enlargement should continue, rub the part affected with mercurial ointment, in quantity sufficient to produce a moderate spitting; and once in three or four days give a gentle saline purge, or give a dram of soluble tartar three times a day, in a cup of the common emulsion, or almond milk.

When suppuration has taken place, which may be ascertained by the increased pain up the neck and shoulder, repeated rigors, the enlargement and tenseness in the region of the liver, and the softness and œdematous state of the external parts; and if fortunately seated in the convex part of the liver, fluctuation, an incision should be made through the teguments, and the abscess should be opened as inferiorly as possible, with a lancet or trocar, so as to procure vent for the matter. The wound must be kept open, till the internal parts of the abscess collapse, and the discharge becomes inconsiderable; it may then be dressed superficially, keeping up a moderate

moderate pressure on the part, by means of a broad flannel roller, passed three or four times round the body.

The bark and a nutritious diet are extremely necessary in this stage of the disorder.

If from too great delay, the abscess should burst into the cavity of the abdomen or thorax, the matter must be discharged by paracentesis. Should it be suffered to lodge in either cavity, the patient will become tabid. One great encouragement towards making the opening soon, is the remarkable tendency which abscesses in this part have to heal. A canula is sometimes introduced to preserve a free passage to the matter when the part does not readily coalesce; but it is an instrument seldom necessary in these cases.

THE LUMBAR, OR PSOAS ABSCESS.

DESCRIPTION. Abscesses of this kind generally form before or by the side of the internal iliac or psoas muscles. The preceding symptoms are, an uncommon stiffness in the loins, attended with an acute pain, which shoots along the spine down into the thigh, great difficulty to stand erect, or turn the limb outwards; rigor, fever, and other inflammatory symptoms, but not so violent as in phlegmon, the pain also is less than in common abscesses, when suppuration takes place. The surrounding parts partake but little of the disease, and the cellular membrane becomes condensed, into a cyst, in which the matter is collected, and particularly confined. This cyst enlarges by slow degrees, and insinuates itself behind the peritoneum, the tumour presenting itself in the back, groin, loins, at the side of the rectum, or beneath Poupart's ligament, even down to the middle of the thigh. In this stage of the disease, there is seldom more pain, except upon exertion of the adjacent muscles,

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than is likely to occur from distension; the skin commonly retains its natural complexion, and fluctuation is to be felt with a forcible impulse, when the patient coughs.

This tumour, when it reaches below Poupart's ligament, has been taken for a crural hernia; but these complaints may be clearly distinguished, by a due enquiry into the rise and progress of the disease, and the most prevalent symptoms. The hernia appears suddenly, and after unusual exertion, is mostly accompanied with pain in and about the protruded part, and is tender to the touch; nausea and vomiting most commonly ensue, and fluctuation is not perceivable. Whereas, in the psoas case, it will be found that painful and inflammatory symptoms had some time before affected the back and loins, that fluctuation is pretty evident to the touch when the patient coughs, and that the tumefied part is not so painful upon pressure, and becomes less stretched upon lying down.

CAUSES. This complaint is most frequently occasioned by a violent strain or bruise, in the small of the back or loins, or by some circumstance productive of inflammation in the cellular substance of those parts; such as colds and febrile disorders, more especially in hectic and cachectic habits.

CURE. The psoas or lumbar abscess might be prevented by timely attention; the most likely means for that purpose are, bleeding and other evacuations, cupping and scarifying, the application of leeches, and blisters on the parts, also a seton on the loins: the diaphoretic drops, with laudanum and antimonial wine, also promise relief at this period of the disease; but, unfortunately, few patients apply for assistance previous to the suppurative state.

Surgeons of eminence have been strangely prejudiced against opening this abscess, and have censured those severely who have done it; but the ingenious

genious treatise lately published by Mr. Abernethy has done away this objection. This skilful practitioner observing that the matter was contained in a cyst which suffered gradual distension, recommends the following treatment from experience :

He tells us, that at first he punctured with the hydrocele trocar, but found, on the redistension of the fascia, that the pressure against the orifice caused it to inflame and ulcerate ; he therefore now discharges the contents of the cyst, by introducing a lancet through the integuments, and passing it obliquely about half an inch between the skin and fascia, and by depressing the point of the lancet, punctures the cyst. The matter being discharged, he closes the wound, and heals with adhesive plaster by the first intention.

Should the part not heal kindly, the cyst soon fill again, or the newly healed punctures be irritated by the pressure of the contained fluid, the pus should be evacuated at an earlier period than usual, otherwise, the second and sometimes third puncture for discharge of matter may be postponed for about a fortnight each. Thus, by occasionally evacuating the contents, the cyst is gradually diminished and contracted.

The bark and elixir of vitriol, lime water and milk, proper nutritive diet, and a dry mild air, are necessary aids : constitutional disease should be particularly attended to.

DISEASED VERTEBRÆ *and* CURVATED SPINE, *with* PALSY *in the lower Extremities.*

DESCRIPTION. Persons of each sex, and of all ages, have been attacked with this disorder. In infants, it is generally supposed to proceed from weakness, or hurt at the birth.

The patient first feels languid and inactive, and presently tires with walking ; soon afterwards his

ankles and knees grow rather stiff, and his toes, pointing towards the ground, occasion stumbling, and, on moving quickly, the legs cross one another, and throw him down. Upon standing up a short time without support, his knees sink and totter, and his body bends forward.

As the complaint increases, his legs and thighs lose much of their powers and sensibility; some being incapable of walking, or even moving in bed; others are able to walk with crutches and to turn themselves in bed. The curvature, or projection of the spine, which is supposed to be the cause, gradually increases, affecting one, two, or more vertebræ of the neck or back, but seldom those of the loins; the effect of which is only perceived in the lower limbs. Children that are naturally weak, and at the same time afflicted with this disorder in the vertebræ of the back, gradually become deformed throughout the bones of the thorax.

If the curvature is not observed, the complaint is commonly supposed to be of the nervous kind, and medicines of that tribe, with stimulating liniments and blisters, are repeatedly administered without effect; even when the crookedness is attended to, the whole is mostly attributed to some injury sustained on that part; to remedy which, every kind of machinery is applied, in order to restore the spine to its regular form.

The patient's health does not seem to be materially affected at first, but by degrees he grows weak, and every way diseased; then consumes away, or perhaps continues for a length of time in a lingering wretched state, incapable of moving from the chair or bed, and the curvature still increasing, is severely afflicted with a train of miserable complaints.

From repeated dissections, at different periods of this disease, it appears, that in those who had not been long afflicted, the ligaments were thickened and relaxed, and the bones rather enlarged; that when the disease

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ease was of some standing, those appearances were more considerable, and the cartilages between the vertebræ were greatly compressed and diminished; and that in such persons as were in the last stage, and died from its consequences, the vertebræ were found to be carious, the cartilages were destroyed, and a quantity of sanious matter was lodged between the bones, and the membrane which covers the spinal marrow.

CAUSES. A morbid state of the ligaments and bones, at the part where the curvature first appears; of which the latter is the effect and not the cause.

CURE. The mode of treatment recommended for the cure of this disease, is said to succeed generally in the first stage, and frequently in the second, except when the spine is greatly and firmly bent; and even in that case, a considerable degree of strength has returned, and the patient has been known to walk alone: but the third stage is mostly attended with fatal consequences.

The remedy consists in keeping up a stimulus and discharge on each side of the projecting or curved part of the spine, by issues made by caustic, which is to be applied in an oval shape, and of proper size in adults to produce an eschar an inch and a half in length, on each side the curve or projection. When the sloughs begin to separate, the middle part is to be cut out, and a large French bean to be placed in each of them; as soon as they are clean, a small portion of cantharides, finely powdered, may be sprinkled on the sores, by which they will be kept open, and the discharge will be increased.

These issues are to be continued, at least till the patient is able to walk, or till he so far recovers the strength and tone of the ligaments as to get upright. Both issues should not be healed together, and the remaining one may be continued till the patient can walk firmly. The bark, cold bathing, steel, and

other tonic remedies, ought to be administered during the process. It is proper to observe particularly, that the cure will be much forwarded by keeping the body as much as possible in a recumbent posture; so that the ligaments and cartilages between the vertebræ, be as free from the pressure and weight of the body as possible.

The world is highly indebted to Mr. Pott for the many useful discoveries and improvements which he brought forward in surgery, particularly for his accurate investigation of this complaint; which, from its having been misunderstood for so many ages past, we may almost venture to say he was born to elucidate.

HERNIÆ, or RUPTURES in GENERAL.

DESCRIPTION. The hernia is a tumour formed by the intestine, or omentum, or both, falling out of the abdomen into some other part. The appellation of this, as well as some other disorders to which the human frame is subject, is not strictly applicable to the complaint. Every kind of rupture, as it is called, being occasioned by dilatation of the peritoneum, and the orifice through which it makes its way, and not by laceration.

It has various denominations, according to the situation or nature of its contents. For instance, when these parts protrude at the navel, it is called *Exomphalos*, or *Hernia Umbilicalis*; between the interstices of the abdominal muscles, *Ventralis*; through the rings of the abdominal muscles into the groin, *Inguinalis*; if confined in the tunica vaginalis, *Congenita*; into the scrotum, *Scrotalis*; which three last are commonly called Bubonocoele. Should they fall under the ligamentum poupartii, or inferior border of the tendon of the oblique muscle, *Femoralis*, or *Cruralis*; or if through the foramen ovale of the os pubis, by some called the great foramen of the ischium,

chium, its appellation is *Hernia Foraminis Ovalia*. The urinary bladder also forms a species of Hernia, when forced through the opening of the oblique muscle, or under Poupart's ligament, and is called *Hernia Cystica*. In short, every part contained in the belly or pelvis, by a dilatation of its containing membrane, is capable of producing tumours of this kind. When the intestine only is prolapsed, it is called an Enterocoele; the omentum, *Epiplocele*; and when both, *Entero-Epiplocele*.

Herniæ may be distinguished from other tumours, by the particular part where the injury happens, and by the swelling returning with or without pressure, upon lying down, unless when it adheres or is incarcerated. If the prolapsed portion be intestine, the tumour is smooth, flatulent, and soft to the touch, also smooth and even to the sight; hard excrement is scarce ever to be felt therein, so that being devoid of such fæces, it sends forth a murmuring guggling noise. The induration from tension is sometimes mistaken for hardened excrement; but fæces retained in the ileum are commonly thin, which for want of due care has been unfortunately proved in the operation for the bubonocoele. When the hernia contains omentum, unless in the inflamed state, it is rather flaccid and more compressible; and in some cases, it feels uneven; should the contents be both intestine and omentum, the different marks are scarcely to be distinguished. When the hernia has been of long standing, the sac mostly adheres to the adjacent parts, cannot be perfectly returned, and the scrotum feels thick and rather corrugated.

Many persons have fallen sacrifices to extreme delicacy, by not taking notice of this complaint in due time; indeed it very seldom happens that a rupture proves dangerous, but from the patient suffering it to remain in the prolapsed state too long, before proper assistance is called: very few cases would

prove more than troublesome, were the contents, when in a moveable state, properly reduced; and secured by an accommodating truss. In cases of this sort, neglect and false delicacy too often prove the parents of danger. Modest women are greatly distressed upon these occasions; and the best way for the practitioner to get at the truth is, to enquire strictly where the pain is most acute; if in or near the navel or groin, let him openly declare his suspicions of a swelling being formed in that part, to a female friend or attendant, and act according to her report.

Women are most subject to hernia umbilicalis, ventralis and femoralis; men and children to bubonocoele.

CAUSES. The hernia may proceed from relaxation in the orifice through which it protrudes, from violent exercise, falls, strains, blows, jumping or vehement exertion of strength, and difficult labour; crying, and violent straining is the frequent cause in children.

CURE. The cure of herniæ that are free from inflammation and adhesion, consists in reducing them when down, and preventing relapse by the application and constant wearing of a truss. The method of reducing the hernia with the hand is as follows:

Place the patient on his back, with his buttocks much higher than his head, raising the thigh of the diseased side; grasp the lower part of the swelling with the hand, and forcibly press it back towards the aperture, endeavouring now and then artfully with the fingers, to insinuate that part which is nearest the opening. If the patient suffers much pain or fatigue, leave off pressing for a time, and use one or more of the following means:

Bleeding, and repeated applications of cloths dipped in cold water, for several hours, or a solution of crude sal ammoniac in vinegar and water; cold applications, such as snow, ice, &c. in preference

ference to warm fomentations, which have little or no effect towards relaxing the tendinous expansion, and principally tend to rarefy the confined air, and increase distension. Stimulating enemata repeatedly injected, and tobacco glysters made from a decoction of the leaves, or with an infusion of the cut tobacco after the manner of tea, both which will have equal effect with the fumes.

Latta, of Edinburgh, in his useful treatise on surgery, recommends repeated injections with a solution of Castile soap, in the proportion of one drachm and an half to a pint of water, as more effective in evacuating the colon and the small intestines, between the cœcum and the constricted part.

Vænesection to twelve ounces, followed by the warm bath and a dose of Dover's powder, have proved successful, when the gut had been down two days, and the parts were too tender to bear handling. A profuse sweat broke out, and in two hours time the stricture gave way to gentle pressure. Two glysters had been administered previous to the bath, but both came away without fæces.

Cold applications, such as large linen cloths dipped in cold water, or with crude sal ammoniac dissolved in it, dashed upon the protruded part, the abdominal region, and the thighs, and fresh applied; snow, and ice also, if to be had, are esteemed efficacious means, in the early part of the strangulation; but the before mentioned author advises, the previous application of ox-bladders half filled with warm water, to the whole of the abdomen, except near the tumour, with design to relax the muscles.

Mr. Sharp, in his Critical Enquiry, recommends suspending the patient, with his head downwards, and his hams bent, upon the shoulders of a strong man; and says, that this method has often succeeded.

In cases of this nature, little is to be expected from purges given by the mouth, as they seldom get

beyond the stomach. Salts, dissolved in a large quantity of water, and taken by cupfuls, are likely to pass the stomach and duodenum; but perhaps a large dose or two of calomel with opium may have better effect than medicines in a liquid form. Suppositories made with salt, honey, and aloes, are also said to be useful. Dr. Mead prescribed two of the following pills, to be given every hour or two, with a cupful of the solution of salts.

Cathartic extract, half a dram; calomel ten grains, opium two grains; to be made into six pills.

If such efforts should prove ineffectual, and symptoms of inflammation, &c. increase, to such a degree as not to admit of handling the part without extreme pain, the operation becomes the only resource, for which no precise period can be regularly pointed out. In some cases, a reduction has taken place after several days extreme pain; at other times, a gangrene has come on upon the second day. The nature of the patient's habit, the strength of his constitution, the means which have been pursued, and the symptoms, ought all to be considered before the operation be absolutely determined upon. On the other hand, to wait till the pain and tenderness of the part subside, the pulse grows languid, and cold sweats and fainting approach, little good is to be expected.

The French surgeons are said to be particularly adroit and successful in this operation, which may chiefly be attributed to their frequent and early performance of it. But to decide alone in a matter of so much consequence, when the judicious opinions of others can be obtained, would be the very height of vanity and imprudence; a suitable consultation is therefore adviseable to the most skilful. The mode of operating is described under the following article.

HERNIÆ *in* PARTICULAR.

Bubonocoele. The word bubonocoele strictly signifies a tumour in the groin; but is commonly understood to mean, such a hernia as not only falls into the groin, which is more expressly termed inguinalis, but also those that descend into the scrotum in men, or the labia pudendi in women.

It is known by the tumour extending itself from the rings of the abdominal muscles to the parts before mentioned. It mostly comes on by slow degrees, but sometimes is suddenly produced by violent exertion, and other causes: and in habits particularly disposed to inflammation is liable to immediate strangulation, although slightly protruding. In common, it is moveable from the first of its prolapsed state, as generally proceeding from relaxation; in which case it returns, upon lying down, by itself, or with a slight degree of pressure, producing a gurgling noise. The external tumour, in the strictured state, is hard and inflamed; the patient suffers acute pains attended with heat and vomitings, first of aliment mixed with bile, afterwards, of excrement; hiccups, cold sweats, and extreme languor soon follow, which symptoms portend gangrene and a speedy dissolution. Previous to the increase of symptoms, when every probable effort has been tried without effect, the operation becomes the only resource, which is to be performed after the following manner:

The pubes and groin being clean shaved, let the patient be laid upon his back, on a table about three feet four inches in height, with his legs hanging down; and after he is properly secured, begin the incision with a strait dissecting knife, just above the rings of the muscles, and carry it through the skin and adipose membrane down to the

the lower part of the tumour; securing such vessels as may require it, before you proceed. After having divided the integuments, make an opening into the protruded peritonæum, or hernial sac, by pinching it up between the fingers, or rather raising it up with the hook, or tenaculum, and cautiously dividing its fibres with the knife, about two inches below the stricture; so 'as to admit the forefinger; upon which, as a director, pass a narrow bladed curved knife with a probe point, keeping the end of the latter all the way rather short of the former, up to the ring, and down to the bottom of the incision in the scrotum. On the first opening of the sac a small quantity of serous lymph will most frequently discharge itself; and when it is fully laid open, the intestine pushes out, and seems to be more in quantity than expected, except confined with the omentum.

The incision at the ring is now to be made, and it should be large enough to admit the end of the finger to pass round the inside of it, in case of adhesion; it must be done with the probe pointed knife, planted on the finger as before directed, taking care to press the gut down with the back and fore part of the finger, and carrying the point of the instrument between that and the ring; this incision may be made about an inch in length upwards; the sac and strictured part being cautiously laid open, the state of the hernial contents are next to be inspected. If found and loose, they should be returned as soon as possible; in doing which, the fingers must be applied to that part of the intestine which is next the mesentery; and the part which came forward last, is to be slowly and gently pressed in, first observing to elevate the leg and thigh, which will greatly facilitate the return.

The prolapsed part being reduced, examine the sac, a portion of which if large, thick, and hard, ought

ought to be removed with the knife; taking care not to come near that part with which the spermatic vessels are connected.

The next thing to be considered is, what ought to be done when the parts are too unsound to be returned. If any part of the omentum be unfit for reduction, let it be expanded, and be removed with a pair of strait scissors, just within the edge of the altered part: which will render ligature to prevent hæmorrhage unnecessary.

When the intestine is gangrenous, and there is a danger of the part separating after the reduction, the upper part should be connected with the wound by future; in doing which, the needle must be passed through the mesentery, at a distance from the gut, including such a portion of that membrane as may favour the junction, and, at the same time, not to injure the gut. If the intestine be in so bad a state as to require division, and the sound parts of the divided ends can be brought together, one end must be passed into the other, and they should be sewed together by a simple stitch or two; and fastened to the inside of the belly at the upper part of the wound, for the chance of adhesion to the internal part of the wound and to one another; or of forming an artificial anus, provided the ends should not unite: the ends of the stitches may be cut off close, and left to be cast off. The most favourable part of this process is extremely hazardous, but proofs are not wanted where, in the worst of these states, it has been attended with success.

When the parts do not adhere to the sac, and are easily returned, a stitch or two made through the teguments will be adviseable, with slips of adhesive plaster in the intervals; lint, spread with cerate, gentle compress, and retentive bandage. In every case, the patient is to be kept upon his back, and a proper truss should be worn after the wound is healed. The wound must not be dressed a second

cond time till the third or fourth day, unless the discharge is great and of a bad quality: light regimen, quietude, and every kind of medicine that will allay febrile heat should be ordered. *See Wounds in General.*

The bubonocœle in women should be treated after the same manner with that of men, and the same kind of truss will be necessary. Those ruptures which adhere greatly to the scrotum, are only to be suspended in a bag truss: they seldom do well after the operation.

Hernia Congenita. There is also a distinct kind of rupture called congenita, which some time ago was not discriminately attended to. The sac that contains the intestine or omentum in this kind of hernia, is formed by the tunica vaginalis testis; the prolapsed portion having intruded itself into the bag which forms that tunic, and having been thrust forth from the body in contact with the testis, at the time when that part descended by the groin into the scrotum.

This complaint generally begins in the early state of infancy: when therefore a rupture has been known to exist from that period, it may be considered as one of this kind. To distinguish it more clearly from the common hernia, let it be observed, that its sac is generally less distended than the other, is more of a pyriform figure, and is scarce ever remembered to have been lodged in the groin, unless accompanied with the testicle. The parts are much subject to adhesion, and are often connected with the testis itself; and it will require great dexterity and care to separate them. A quantity of fluid collected in the sac, and confined at the entrance above, has been known to give the appearance of a common hydrocœle; but a strict enquiry into the previous state of the tumour will obviate every kind of mistake.

This species of rupture ought to be particularly attended to in its early stage; and when reducible,
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is to be kept up by proper bandage or truss; if strictured, it must be treated as in the bubonocoele, but requires a cautious management of the knife, after the teguments have been divided, by repeated slight incisions; the vaginal tunic being the containing sac, and the contents, either adhering or lying closely contiguous thereto.

Hernia Umbilicalis, or Exomphalos. The umbilical or navel rupture is formed by a protension of the hernial sac through the navel, and its contents are the same as in other ruptures. A great quantity of omentum is sometimes found in those of long standing, and infants and women are most subject to this disorder; the first from the separation of the funis, the last from child-bearing. Some of the latter are large, yet easy to be reduced, others quite immovable, and many have been kept up for years without much trouble; but persons advanced in life have frequently been subject to pain and weakness in the bowels from them.

In young persons, when they are small, and do not adhere, they are to be cured by proper bandage or truss. If strangulated, the operation must be performed; but when large and adhering, it has seldom been attended with success. It is to be done on the same principle with that of the bubonocoele. Cases are recorded where the mortified part has been removed both by art and nature, and the fæces have made a constant passage through the opening.

Hernia Ventralis, is, when the parts protrude between the interstices of the muscular fibres of the abdomen, which disorder is mostly observed to happen near some part of the linea alba. This hernia, in its recent state, may be kept in with a proper truss, otherwise it is apt to increase to a great bulk; if strangulated, the opening must be cautiously dilated.

Hernia Femoralis. This rupture makes its descent into the thigh, through the arch made by the os pubis

pubis and the ligamentum fallopii, where the iliac vessels and tendons of the psoas and iliacus internus muscles pass from the abdomen, and is more frequent in men than in women. In endeavouring to reduce it with the hand, it must be pressed upwards, rather towards the pubis than the ileum. Should the operation prove necessary, it is right to observe, that the incision in a male subject be made obliquely outwards, to avoid the spermatic vessels, and that there is danger of injuring the epigastric artery, which would be difficult to take up without hurting the large vessels. Considering the great space between the ilium and pubis, which is chiefly occupied by cellular membrane and fat, it would be right first, to attempt the return of the prolapsed part without dividing the tendon; but if a division be absolutely necessary, the incision should be made as small as can be done with propriety, with the probe-pointed knife, on the end of the fore-finger, held tight under the edge of the tendon, proceeding further as already advised.

Hernia Foraminis Ovalis. This species of hernia very seldom happens, and has been only attended to of late years; it descends through the foramen ovale of the os pubis. In men it protrudes in perinæo, in women near to the labia pudendi. This is to be treated after the manner heretofore directed.

Hernia Cystica. A portion of the bladder may make its descent through the ring of the abdominal muscle into the groin and scrotum, or under Poupart's ligament. This hernia is generally attended with the bubonocoele, of which it may be either the cause or consequence.

The simple hernia cystica lies upon the spermatic cord; the complicated, between that and the bubonocoele. Both kinds are to be distinguished by tumour with fluctuation, which will recede upon pressure, or from a discharge of urine. In women this hernia is most likely to fall under Poupart's ligament,

ment, and instances are recorded where it has passed between the anus and vagina, and projected in perinæo; it may also be complicated with a prolapsus vaginæ.

Mr. Keate has lately favoured the world with a curious account of a hernia cystica, conjoined with an inguinal rupture and a hydrocele; also, of the salutary effects of ice when liberally applied to the bubonocoele.

When the bladder can be reduced, a truss, as in other cases, should be applied; if adhering, it must be suspended only. Should an incision be made by mistake into the part, or in consequence of inflammatory stricture at the ring, a catheter must be kept in the bladder for the purpose of carrying off the urine, and facilitating the cure of the wound. This hernia proves the necessity of being circumspect in opening tumours of these parts.

DISORDERS OF THE SCROTUM.

HYDROCELE, WITH ITS DISTINCTIONS.

These disorders, which are termed spurious or false herniæ, derive their names from the parts in which they are seated; for instance, hydrocele of the tunica communis, &c. from the change in their natural structure, such are, circocoele, varicocoele, and sarcocoele; to which may be added, the inflammatory disease of the testicle, called Hernia Humoralis.

DESCRIPTION. The term hydrocele is arbitrarily confined to the watery tumours which are formed within the membrane of the scrotum, the coats of the spermatic vessels, and of the testicles. The first commonly proceeds from a general anasarca, and is frequently carried off by punctures in that or some more depending part of the body; the latter are local, and may be divided into three distinct
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heads; the first of which is a collection of water, formed in the cells of that part of the cellular membrane called tunica communis, which covers and connects the spermatic vessels; the second is, when it is formed in one cell only of the preceding tunic, and is termed the encysted hydrocele of the tunica communis; the third is produced by a fluid collected under the tunica vaginalis testis.

CAUSES. All these membranous parts are supplied with a fluid that keeps the contained part from adhesion; which fluid, either from a defect in the absorbent vessels, or an increased secretion, or both, becomes accumulated within the confined cavity, and by gradual distension, forms a tumour.

PARTICULAR DESCRIPTIONS AND CURE.

Hydrocele of the Cells of the Tunica Communis. When this tumour is of moderate size, the scrotum discovers no disease except at the time when the skin is corrugated, it then appears fuller, and hangs lower on the diseased side, and on being suspended lightly in the hand, is heavier than common; the testis and epididymis may be distinctly felt below in their natural state, and the spermatic cord is much thicker. The form of this tumour is pyramidal; it gradually recedes upon pressure, and returns as soon as that pressure is withdrawn; it is attended with a slight pain in the loins, and when the extravasation is confined below the ring of the oblique muscle, the cord may be distinctly felt. If the cells within the abdominal ring be affected, the distended membrane feels not unlike the epiplocele; when this is the case, and the tumour is large, it becomes exceedingly troublesome, and the cure is hazardous.

Encysted Hydrocele of the Tunica Communis. This tumour is seated in the same part with the preceding, except that the water is contained in one cell, forming a cyst. It generally fixes in the middle of

the cord, and is of an oblong figure; it is mostly so tense as to prevent fluctuation, by which means it has often been mistaken for what never has existence; namely, a wind rupture. It gives the person no pain, and sounds when struck as if it contained wind, not water. It is sometimes complicated with a true hernia, or the vaginal hydrocele. Infants are more subject to this disorder than adults, and it is often dispersed in young children by warm fomentations, and keeping the belly open. Mr. Keate's epithem, as described at the latter part of this article, is perhaps preferable to warm applications. Discharging the fluid by puncture with a lancet, has also proved successful with children. In adults, the cyst is sometimes so thick as to require an incision to be made its whole length, which, in good habits, may be done with safety.

The Hydrocele of the Tunica Vaginalis Testis, or bag which includes the testis, is a common disease, and persons of all ages are subject to it. It is sometimes produced suddenly, at other times it advances slowly; is of various size and figure, for the most part round, but as it increases becomes largest downwards. With some it is hard, when the testis is to be felt with difficulty; with others it is soft and lax, which particularities afford an opportunity of easily distinguishing it. It gives no great pain except in the back, from its weight; and may be distinguished from a hernia by feeling the upper part of the spermatic cord. When that part is not to be felt, it is most probably combined with an enterocele. In its simple state, it may be known from every other tumour of its kind, by a firmness and hardness at the posterior and middle part of the tumour, owing to the junction of the tunica albuginea and vaginalis; whereas, in every other hydrocele, the fluctuation is felt equally in every part. By this circumstance alone, it may be distinguished from the anasarctous tumour of the scrotum, which is every where alike

soft and swelled; from the encysted hydrocele of the cord, which though circumscribed is not compressible, but the same to the touch in every part; and from enterocoele, by the testicle being generally found at the inferior part of the swelling.

The treatment is either *palliative* or *radical*; the first, by discharging the fluid; the last, by destroying the cavity of the bag, or by adhesion of the membranous parts.

The palliative remedy is performed by puncture, with the common lancet or the trocar: Lint and plaster are generally applied to the little wound, and the scrotum, if large, is to be supported by a bag-truss. The orifice commonly heals soon, but in some habits it has been known not to terminate so readily, considerable inflammation having followed. The fluid ought to be drawn off in this disease much earlier than it is, waiting only till the part is so far filled as to admit of its being done with safety; such treatment is very likely to prevent return.

Various means have been used for the radical cure of the hydrocele; incision, caustic, injections, tent, and seton; and they have been all warmly espoused. The curative intention is, to bring on inflammation in sufficient degree to produce adhesion in the tunics without alarming symptoms. The more gentle then and less irritating the method is, if equal to the task, the more entitled to preference; upon a comparative view, no one promises better, and has been supported by more respectable authority, than those by seton and injection. The instruments used for the cure by seton, on the improved plan, are as follows:

A trocar, with its canula nearly one fourth of an inch in diameter; another canula, called the seton-canula, made of silver, of fit diameter to pass easily through the canula of the trocar, the length of which ought to be five inches; and a probe six inches and a half long, with a fine steel trocar point

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at one end, and an eye at the other, sufficient to carry a seton of coarse white sewing silk, that will pass without trouble through the seton canula.

The operation is thus performed: perforate the inferior and anterior part of the tumour with the trocar, withdraw the perforator, and when the fluid is discharged by the canula, pass the seton canula through that of the trocar, so as it may reach the upper part of the tunica vaginalis, and may be felt in the superior part of the scrotum; then convey the probe, armed with silk, through the seton canula, and pierce the tunic and teguments with its point; which done, draw the seton through the canula, and leave a proper length out at the upper orifice, then withdraw both the canulas.

This operation has been much improved by the particular attention of Mr. Howard, of the Middlesex Hospital; who, in a pamphlet that displays much judgment relative to the subject, has observed, that fewer threads will do in general, and that consequently the trocar and canula may be less in size than has been used. He advises a few threads to be drawn from the middle of the seton when the inflammation runs high; and is of opinion, that in some irritable habits, eight or ten threads will do from the first; also, that the inflammation may be regulated by increasing or diminishing the number of threads.

As soon as the operation is finished, the patient should be put to bed, and twenty or thirty drops of laudanum may be given, and be occasionally repeated. About the second or third day, the testis and scrotum will begin to inflame and swell; then foment, poultice, and suspend the part: order also a cool temperate regimen, and keep the body open. As soon as inflammation is abated, the patient may be permitted to lie on a couch, or sit in an easy chair with his legs raised; and a dose of bark may be taken three times a day. A pulse quicker than

natural, a white tongue, thirst and restlessness, a slight degree of pain in the part, and sometimes in the loins, are the general symptoms attending this operation, particularly when regulated by Mr. Howard's judicious precautions.

At the expiration of ten or twelve days, the soreness and swelling are generally dispersed, when it will be time to withdraw the seton; which should be done by taking out a few threads at a time. A soft pledget of lint spread thin with white cerate, is to be applied over each orifice from the first of the cure, and the saturnine cerate over all. In some constitutions, it has proved necessary to remove the whole of the seton, as soon as the parts become moderately inflamed.

By this method, for which, in its improved state, the world is indebted to that great ornament of the profession Mr. Pott, the parts are preserved entire; and except in irritable or bad habits, when properly managed, more inflammation is seldom produced than is necessary towards cohesion: and when otherwise, it is more likely to be checked by cold applications than hot fomentations and emollient poultices.

There are four methods of operating for the radical cure now in practice, every one of which has its supporters; viz. by seton, caustic, simple incision, and injection. Inflammation is the natural consequence of each, and must be more or less, according to the nature of the constitution, and the greater or less exposition or irritation of the membranous parts.

The operation by *Seton* is already described.

The mode of using caustic is prescribed as follows: apply a piece of caustic paste, about the size of a sixpence, well guarded with adhesive plaster, on the anterior and inferior part of the scrotum; remove it at the end of five or six hours, then apply a large suppurative poultice, and suspend with a proper bandage.

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The eschar generally separates in a few days, and the tunic sloughs out in about five or six weeks, when the fore begins to heal. This method, under the conduct of the late Mr. Elfe, whose early death was a public loss, was much more successful than might be expected.

The operation by *Simple Incision* is done after the following manner: the patient being properly secured by two assistants, let the operator grasp the tumour firmly with one hand, and divide the teguments with the other, making one incision from the upper part of the tumour anteriorly, down to the most depending part; the tunica vaginalis being thus laid bare, an opening is to be made with the lancet, at its upper extremity, large enough to admit the fore-finger, on which the probe-pointed bistoury is to be conducted, dividing the sac in the course of the incision to the lower part of it. If the sac be much thickened or hardened, a portion of each side of it may be removed. When the testis protrudes let it be gently pressed back, and kept so with a long slip of lint placed between that and each edge, and hanging out at the bottom of the wound; the other dressings should be soft lint, a compress of soft linen rag, and the suspensory or T bandage. About the third or fourth day, warm fomentations, and the bread poultice were formerly used till the parts digested, and inflammation abated; afterwards as in common—but cold applications from the first are now preferred, and the cure is generally attempted by means of adhesive inflammation, which chance renders this mode of operation far less objectionable than heretofore; in fact, preferable to any other, when the tunics are likely to be much thickened, or the testis is diseased; besides, there is a full opportunity of investigating every part, and rendering the cure at once complete.

The mode of cure by injection is performed by shrowing into the sac, after the water has been let

out by puncture with the trocar, red wine, diluted with from one to two thirds of water, more or less, according to the irritability of the parts, in sufficient quantity to be diffused over the whole cavity; which may be more perfectly effected by handling and changing the position of the parts; it seldom requires to be retained more than a minute or two, but this must be according to the sense of pain produced by it, and the irritability of the parts.

Surgeons of former times certainly practised this mode of cure, but the compositions they used were extremely irritating, consequently productive of much pain and inflammation, and even of a total solution of the parts; from which circumstances this method fell into general disrepute. It is to the ingenious successor and son-in-law of Mr. Pott, that we are indebted for the revival of the curative process by injection; who, in his valuable edition of that gentleman's works, has illustrated its effects by reciting several cases which were attended with extraordinary success. He particularly recommends the vinous injection alone, or modified so variously with the addition of water as to be effective without exciting more than necessary stimulus: but it appears to be much more likely to succeed in the early stage of the disease, than when the membranous parts are much distended and thickened.

Mr. Keate, an eminent and very creditable surgeon, has lately published an ingenious pamphlet, recommending the free use of a topical application for the cure of the hydrocele. It consists of sal ammoniac 1 oz. Rectified spirit of wine, and vinegar, of each 4 oz. He has given six cases of its happy effect; two from its application after tapping, the other four by exciting absorption without perforation. Should this practice only succeed in a few recent cases, it will prove a welcome remedy. Mr. Earle, in his treatise on the Radical Cure by Injection, takes notice of two trials of this discus-

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tient, in both which it excited much external inflammation, without any good effect.

Circocoele and Varicocoele. The first complaint is a varicose distension, or tortuous enlargement of the spermatic vessels of the cord, seated on that process somewhere between the abdominal ring and the testis, most commonly just below the ring, where it resembles to the touch a protrusion of the omentum. The *Varicocoele* is described as a nodous tumour of the spermatic vein, or the veins of the scrotum; all these diseases are most probably occasioned from obstruction by pressure, or relaxation.

The *Circocoele* is a rare disease, sometimes appears suddenly, and in inflammatory habits is attended with much pain; requiring venæsection, opiates, and cooling medicines; externally, the remedies prescribed under the article *Inflammation*, with the suspending bandage. The consequence is seldom very material, except when the testicle, although apparently unconcerned, falls into a wasting state. In common cases there is little or no necessity for medicine. Former practitioners attempted its cure, when extremely painful, by means of caustic and ligature; but such severe treatment has long been discarded: Heister advises the varicose part to be opened by incision, but this only in very painful cases; and under such circumstances the means above prescribed, and a recumbent posture, are mostly effective.

SARCOCELE.

DESCRIPTION. This disease is an induration and enlargement in the body of the testis, which in time becomes scirrhus, and sometimes degenerates into cancer. The epididymis is also subject to the same disease; and this appendicle has been known to grow so hard, and swell to that degree, as to be mistaken for an adventitious swelling in the testis. Induration
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in the epididymis has continued for years, and at last suppurated; and its consequence is not so much to be dreaded, whilst the glandular part remains sound; but should the latter become scirrhus and cancerous, the epididymis must in the end be so too.

Scirrhus tumours of the testis as well as those of the breast, have been known to continue in an indolent state for many years. Some surgeons of eminence have given it as their opinion, that the latter should be extirpated in the early stage, but that the former should be suffered to remain till some particular change may require it, such as increase of pain and size: still when the testis is extremely hard and uneven in its surface, attended with darting pains, and gradually increasing, particularly if the spermatic cord be much affected, surely delay is dangerous. The sarcocèle, in the first stage, is attended with little or no pain; but as it increases in hardness and magnitude, it causes a great sense of weight in the loins, and acute lancinating pains, which strike along the cord up to the small of the back.

CAUSES. It may arise from nips, blows, &c. and from inflammation in the part, or in the spermatic process.

CURE. An alterative course of calomel with cicuta, has proved successful in the more early state; and electrical shocks through the part, daily repeated for a length of time, have been known to reduce the tumour, in so great degree as to set aside an apparent necessity for the operation. Vide *Scirrhus*.

In addition to what has been remarked already respecting extirpation, it is advanced by men of eminence also, that the operation has been often unsuccessful in the milder stage of scirrhus, and has answered well in its most advanced state. This remark gives us therefore to understand, that castration

tion ought not to be advised without immediate necessity, and that success should not be despaired of at the latest stage of the disorder. Yet let it be observed, that when the cord is thickened, and *indurated* at or above the ring, and much pain is felt in the back whilst the part is suspended, and the patient is lying in bed; the case is too desperate to expect success from such an attempt.

This complaint has originated in the cavity of the abdomen, from inflammation near the course of the spermatic vessels, which produced thickness down the cord with great pain, and much tumour and induration in the right testis. Repeated bleedings, cold applications, and the customary medicines, relieved the pain, and rather lessened the tumour: soon after, the left testis and cord became slightly tumefied and inflamed, but yielded readily to the same remedies. The inflammation again flew to the right testis, which grew larger and more indurated; and was accompanied with greater pain in the back and down the cord, than in the testis. Not long after this relapse, the patient was abruptly removed from those who had first attended him, and were fully acquainted with the rise and progress of the disease: the testis was extirpated, probably during the inflammatory diathesis, and, in a few days, the patient died; probably mercurial inunction might have answered, the operation was a hasty decision.

The direction for performing castration is as follows: place the patient horizontally on a table, with his legs hanging down, and properly secured by assistants; firmly grasp the tumour with one hand, and with the other make an incision down the course of the swelling, through the cutis, cellular membrane, and dartos, beginning an inch at least above the part where the cord is to be divided, and ending at the inferior part of the scrotum. The spermatic cord being laid bare, and freed from cellular attachments, separate the artery and vein from the vas deferens;
then

then make a ligature round the two former, and divide the whole cord about half an inch below the ligature; after which dissect the testicle out from its connexions.

Secure the bleeding arteries of the scrotum also by ligature, leaving the ends of each a proper length to hang out of the wound; sponge the parts well with warm water, place the edges of the wound as apposite as possible from one end to the other, and retain them so with two or three futures of the interrupted kind, and slips of adhesive plaster. It will not be amiss to tie the futures with slip-knots, to prevent the necessity of removal in case of future hæmorrhage; dry lint is to be applied to the part, and the most simple dressing. By these means the parts are brought to heal by nature's first and second process, and as much sound skin as possible will be preserved in aid of those efforts.

We are indebted to Mr. Fearon for much improvement in the operation, both for the scirrhus testicle and breast; and whoever reads with attention his treatise on Cancers of the Breast and Testis, will be amply rewarded. One or two circumstances may be thought worth mentioning with respect to the difference in operating, as formerly practised, and lately introduced by that gentleman. When the integuments in the line of operation for extirpating the testis was diseased, it was thought proper to make two *semi-oval* incisions, so as to include the whole of the diseased skin; this mode of operating was also observed when the tumour was large; for fear so much loose skin should be productive of abscesses, and be inclined to grow hard and diseased; but in case of ulceration, or an unsound state of the scrotum, he makes a second incision in as *direct* a line as the inclusion of that part of the integuments will admit, which answers the purpose of dissecting away the diseased part with the testicle.

Mr.

Mr. Sharp after having removed the testicle from the lower part of the scrotum, secured such vessels of that part by ligature as required it, and for greater security advised two ligatures to be made round the upper part of the cord, if there were room enough between the ring and the tumour; and the division of the cord to be made just below the inferior ligature. M. Le Dran recommended a ligature to be passed underneath the cord, and to be left there to be tied if necessary: having first pinched, rubbed, and bruised, the cord in so great a degree, as to prevent hæmorrhage.

Mr. Warner has observed that the diameter of the spermatic artery is so small in this part of it as to render a previous ligature round the cord unnecessary; and that the vessel may just as easily be secured, as an artery after the amputation of a finger; which is never thought necessary to be done till the part is removed. He also has informed us, that he has several times trusted to the application of a small piece of the lint to the mouths of the vessels, after having compressed them for some minutes between the fingers; notwithstanding which respectable authorities, troublesome and dangerous hæmorrhages have ensued, and the safest and most commodious method with respect to the present after-treatment, is firmly to secure the artery by ligature.

OTHER DISEASES OF THE SCROTUM.

The Scrotum is generally subject to inflammation, tumour, abscess, fistulous sinusses, callosities, &c. and is particularly affected with anasarcaous swelling, hæmatocele, and cancer.

: *Anasarcaous Swelling.* This may arise from a local obstruction or weakness of the lymphatics, but is most commonly derived from a general anasarca, which sooner or later diffuses itself into the scrotum. It is a soft, pellucid, pitting swelling, and in process of time spreads to the groin and penis; which last becomes

becomes very much distorted, and is at length buried as it were in the tumour. The labia pudendi are also subject to the same complaint, to great extent and enlargement.

Both kinds are easily distinguishable from any tumour of these parts, and are to be remedied, by making a few slight punctures, in different parts, with the point of a lancet; which are less liable to inflame than scarifications, or any other means; and if required, may be safely repeated.

Hematocoele, is a swelling of the scrotum, or of the spermatic process, proceeding from extravasated blood, occasioned by a rupture, disease, or injury of the vessels of those parts; and when the testis is found, may be cured by making a longitudinal incision, and discharging the contents: but if complicated with a sarcocele or scirrhus testicle, a removal of that part is adviseable; provided the spermatic cord be not too much diseased.

Cancerated Scrotum. Chimney-sweepers are particularly affected with this disease. It begins with a kind of wart in the lower part of the scrotum, and soon produces an ill-conditioned painful ulcer, with jagged edges, which in time eats through the cellular membrane, and seizes the testis; then runs up the spermatic cord, and spreads over the groin, the abdominal muscles, and the viscera; which parts becoming tumefied and indurated, are painful in great degree: constipation ensues, and death happily relieves the patient. It is called the foot-wart, and generally proceeds from not keeping the corrugated part clean, and as free as possible from that pungent concrete.

The most probable method of cure is, to remove the whole of the diseased part in its early stage. Mr. Pott was the first medical writer who publicly noticed this disease, and he has remarked, that it seldom, if ever appears before the age of puberty; also that when it has spread to the testis, it extends itself rapidly,

pidly, painfully, and destructively. For the general treatment in the more advanced stage, vide, *Cancerated Ulcer*.

DISORDERS OF THE PENIS.

PHYMOSIS.

DESCRIPTION. The phymosis is when the prepuce or foreskin is so tightened over the glans, as not to admit of its being drawn back; it is generally attended with inflammation and tumour of the part, pain and some difficulty in passing the urine, also with ulceration or morbid secretion between the prepuce and glans. Sometimes the skin is greatly thickened and hardened, and partial adhesions take place; the discharge is confined, and the concealed parts become much eroded, especially when the complaint is virulent.

CAUSES. Natural constriction, want of cleanliness, and venereal intercourse.

CURE. In slight cases, immersing or syringing the part with warm water, washing it with chamomile infusion and milk, and applying the saturnine or emollient poultice, have sufficed. Should the part inflame, the customary means must be pursued, but when it proceeds from a venereal cause, and chancres, or foul ulcerations, are concealed beneath the prepuce, it will be proper to use a very slight solution of sublimate by injection, two or three times a day, and it will be prudent to pass a probe armed with lint, if practicable, daily, between the glans and prepuce. A mercurial course with bark and opium, and the foregoing means, will generally preclude the operation; otherwise it will be absolutely necessary to release the part by incision. A proper division is sometimes requisite, when the glans is naturally too tightly covered.

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When the prepuce is not much thickened and indurated, an incision only may answer the purpose, and the most eligible and ready manner of doing it, is that proposed by Mr. Bell, which obviates the several inconveniences that attend the common mode of cutting it upwards with the knife and probe-scissars. It is done by passing a director along the side of the prepuce; between that and the glans, with a sharp-pointed narrow-bladed bistoury, adapted thereto, and buried in its groove with the edge forward: as soon as the director is felt at the termination of the glans, the point of the bistoury is to be pushed through the prepuce, and drawn forward the whole length of it.

When the end, or chief part of the foreskin is greatly indurated, it will be necessary to draw the prepuce forward, and take it off with the knife, or to dissect off the whole of it, taking care to secure the vessels.

The first dressings should be strips of lint, properly interposed between the edges of the wound, in case of a partial incision, also between the prepuce and glans, to prevent adhesion, a linen compress and the suspensory.

PARAPHYMOSIS.

DESCRIPTION. This disorder is the reverse of the former, being a strictured retraction of the prepuce behind the glans. It is sometimes naturally turned back in this manner, without the least inconvenience. In the morbid stricture, the glans and prepuce are both swelled and inflamed, and reciprocally affected, till the circulation is sometimes so greatly obstructed, as to produce a mortification; which is commonly preceded by a pellucid tumour, called the crystalline.

CAUSE. This complaint may arise, from whatever excites inflammation and tumour in the glans, penis,

penis, or prepuce, when the latter is drawn behind the glans; but it is mostly brought on by infectious intercourse.

CURE. In recent cases, the prepuce has sometimes been reduced by immersing the glans in cold saturnine, or common spring water, then pressing forward the prepuce, and compressing the glans: a long continued application of the above means has succeeded, prior to the crystalline state; cold applications repeated for sometime together, bleeding, and other antiphlogistic treatment, are very proper when the parts are in the early state of inflammation: but if the stricture increase, and the crystalline state begin to form, three or four incisions are commonly made on the sides of the prepuce, with the shoulder of a lancet, sufficiently deep and long to release it; yet numerous and slight punctures have answered all the purposes equally well. Lint and emollient poultices are proper applications to the incisions, and the penis should be suspended with its end upwards. If the habit be languid, and gangrene be threatened, the bark, cardiac medicines, fomentations, and warm poultices, will be necessary. When the paraphimosis arises from a venereal cause, it will require a gentle alterative course.

Imperforate Prepuce. This defect is now and then found on new-born infants. It may be sometimes relieved by a small puncture, and keeping the part free from adhesion by means of a dossil of lint, or some kind of soft tent. When the end is twisted and coalesced, the prepuce should be drawn forward, and taken off above the adhesion.

Imperforate Glans and Urethra. When the obstruction is occasioned by a thin membrane, an opening may be made effectually with the lancet: if thick and fleshy, without the least appearance of a passage, a small triangular trocar must be carefully passed up the glans, as near as possible in the natural course, to the part where it appears to be distended by the

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urine. All which new passages must be attentively kept open, by dossils of lint, a small bougie, or whatever will preserve the aperture, without painful distension.

Incomplete Perforation. If the passage for the urine should open just behind the glans or frænum, it may be necessary, for certain natural purposes, to make an opening with the trocar through the glans, to the part where it should naturally terminate: and the false opening may be healed up, with the assistance of a short flexible catheter. In cases of this sort the operation need not be attempted, till the patient has arrived at an age to require it.

Contracted Frænum. Sometimes it happens that the frænum is so short, as painfully to incurvate the glans at the time of erection; in which case, it may be totally divided with the greatest safety, either with the scissars or scalpel.

Warts and Excrescences. These complaints particularly infect the penis, but seldom without a venereal cause: they generally fix on or behind the glans, and the inner duplicature of the prepuce; are of a spongy fungous nature, pendulous; or with a broad basis, separate, or in clusters. The smaller kind may be easily removed, by gentle cathartics, such as savin leaf powdered, alone, or with red or white præcipitate, or with prepared calomel. Others require to be removed by repeated touches with the lunar caustic, or with the knife.

Fistule and Calculi affecting the urethra, are particularly treated of elsewhere.

Cancer and Mortification. A cancer may originate from a mere pimple rising on the glans or prepuce, which is sometimes the case with chimney-sweepers afflicted with the foot-wart. It may also be produced, by an enlargement, scirrhusity, or erosion of the glans, after the paraphymosis. For the remedies, see *Cancerated Ulcer*.

Mortification may proceed from continued stricture

ture behind the glans. Upon both these occasions, *amputation* will become necessary, and may be performed thus :

A tourniquet being applied at the upper part of the penis, make a circular incision through the sound integuments, just above the diseased part ; then draw back the skin, and boldly make a second incision through the body of the penis ; loosen the tourniquet, and secure such vessels as bleed freely with the needle or tenaculum, and ligature. If, after lint and compress have been applied, blood should still ooze from the surface, a silver canula must be introduced into the urethra, and a slip of rag wound round the penis. The canula is seldom necessary, except when hæmorrhage of this kind happens.

STONE IN THE BLADDER.

Stony concretions may be formed in many parts of the body, but are no where so frequent as in the kidneys and bladder. Both sexes of all ages are subject to this complaint, men more than women, children and young persons most. It is not the business of this publication to aim at investigating the remote causes of this concrete, or why some constitutions are more loaded with it than others ; the principal design throughout being to describe the symptoms of every disease which comes under the particular cognizance of the surgeon, the obvious causes, and the means of cure.

SYMPTOMS. The following signs generally indicate a stone in the bladder : Great and frequent inclination to make urine, and that voided with much pain, by drops ; sometimes it comes forcibly, and suddenly stops, attended and succeeded by an uneasy sensation in the glans penis, titillation at the end of the urethra, and tenesmus, or frequent attempts towards a stool. The urine is sometimes very clear much oftener slimy, gravelly, and loaded with mucus of a

purulent cast; it is also bloody, particularly after riding, which exercise generally gives pain to the bladder, urethra, and penis. The patient is often not able to pass any urine, except in a lying or kneeling posture, resting as it were upon his head, and now and then he has a sense of the stone shifting its lodgement; all which symptoms and sensations may be produced by inflammation, tumour, stricture, and hardness, at, or near the neck of the bladder. Particular stress is laid by some upon the sense of weight being taken off the neck of the bladder, by sitting on a hard seat, or pressure with the fingers on the perinæum; but the most certain method of judging whether there is or is not a stone, must be by searching; and even that has proved deceitful, although under the management of the most experienced lithotomist. The symptoms generally increase, according to the size, surface, number, and weight of the stones contained in the bladder, and the irritability of the habit.

CAUSES. The first-formation of the stone is mostly in the kidney; a few gravelly particles being there concreted, pass from thence down the ureter into the bladder, and form the nucleus; which is gradually enlarged by the accretion of similar particles, separated from the urine, and retained in that cavity. Coagulated blood, hairs, bullets, needles, small pieces of bone, bougies, and other extraneous bodies, have also been the bases.

CURE. Divers medicines have been recommended as solvents to the stone, most of which are prepared from an alkali, and taken in a diluted state; besides which, medicated infusions and decoctions, mineral waters, terebinthines, lime water, fixed air, mineral acids, caustic alkalies, and neutral salts, have been prescribed; yet no positive evidence of dissolving the stone in the bladder can be produced in favour of the most boasted remedy. That each has its palliative quality, cannot perhaps be denied; but every
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fit of the stone being produced from irritation or inflammation, bleeding, diluents, opiates, and gentle laxatives are to be preferred for that purpose.

Great relief has been attributed to taking no other liquid than an infusion of dried peach leaves. It is a fact, that a reverend acquaintance of the author was frequently afflicted with violent returns of pain from a real stone in the bladder: he dreaded being cut; but after having continued taking this liquid as common drink for several months together, and used no other medicine or liquid than a customary opiate and gentle laxative mixture, he was able to ride on horseback upon most occasions: during the time of taking the infusion, he voided much more whitish, gravelly concrete than before. Previous to using it, he had been for near three years much confined at home, and was seldom able to bear the motion of his chariot.

The *physalis alkekengi*, or what is commonly called winter-cherry, has been confidentially taken of late by persons much afflicted with gravelly concrete; the dose from one scruple to half a dram twice a day.

But the medicine of greatest repute at this time for relief of the stone and gravel, is that which is recommended by Mr. Benj. Colborne, of Bath, who, after having long undergone the severest tortures, without relief from every other medicine of repute, first experienced its happy effects: which case, with a variety of others, may be seen in Dr. Falconer's Appendix to Dr. Dobson's Commentary on Fixed Air. The mode of preparing this *Mephitic Alkaline Water* is more particularly mentioned in that publication, from which the following is an extract:

Put two ounces and a half troy weight, or two ounces and three quarters avoirdupois, of dry salt of tartar, into an open earthen vessel; pour thereon five full quarts, wine measure, of the softest water, and stir them well together with a clean piece of wood.

After standing twenty-four hours, decant as much as will fill the middle part of the glass machine for impregnating water with fixible air. The alkaline liquor is then to be exposed to the stream of air, as in common. When the alkaline solution has remained in this situation till the fixible air ceases to rise, a fresh quantity of the fermenting materials should be put into the lower part of the machine, and the solution exposed to a second stream of air, and this process should be repeated four times.

When the alkaline liquor shall have continued in this situation about forty eight hours, it will be fit for use, and should be drawn off into clean pint bottles closely corked up, and placed with their bottoms upwards in a cool place.

Two thirds of a pint or more may be taken in twenty-four hours, at times when the stomach is most free from aliment. Eight ounces have been taken three times a day; but when so great a quantity appears to be necessary, it is recommended to have the alkaline solution made of double strength, in which case half the quantity will suffice. In some cases, twice a day, about noon and in the evening, will be sufficient; and as a preventative, about an hour and a half before dinner.

Should it prove cold or flatulent to the stomach, Dr. Falconer recommends a small portion of spirit to be added. He also says, that about a fourth part of hot milk, especially in cold weather, tends to reconcile it to the stomach.

When the patient is grievously afflicted with the stone, extraction becomes a necessary remedy; but before the description of that operation, it will not be improper to notice the previous one, that of ascertaining the existence of a stone in the bladder, commonly called searching.

SEARCHING FOR THE STONE.

The operation of searching, or sounding, is performed with a solid instrument, called a sound; which for males, is required to have a long curvature, conformable to that of the urethra; whereas for females it may be nearly strait. The passing the sound into the bladder of the male appears to be a trifling operation, but it has sometimes baffled the most expert; and dexterity in doing it, is only to be acquired by frequent practice. The difficulty of using the female sound or catheter, is principally its introduction into the meatus, the passage into the bladder being short and direct.

Sounds should be of different sizes, suitable to different patients and ages; the very slender ones are not so easily passed as those of larger size, by reason of the interruptions they are liable to meet with from the inequalities of the passage. The mode of introducing the instrument into the bladder, is this:

The patient being laid on his back upon a table of convenient height, with his thighs properly elevated and extended, take hold of the penis with the left hand, and with the right pass the sound dipped in oil, into the urethra, holding the convex part of it towards the belly of the patient; thrust it gently down the passage, at the same time drawing forward the penis upon the instrument, till it reaches the bulb of the urethra; then turn the sound dexterously, so as to carry the concave part next the abdomen; and without much force push it forward into the bladder. Sometimes its passage is obstructed by the neck of the bladder; to get over which, instead of using force, the extremity of the sound must be tilted up. If it should not be forwarded from that direction, withdraw it a little, and pass the fore finger of the left hand properly oiled into the rectum, by which

the end of the instrument may be lifted up, and easily slipped into the bladder.

Those practitioners who are not sufficiently skilled in this operation to make the turn in the proper place, may pass the instrument with the concave part towards the belly.

The sound being entered into the bladder, pass it regularly from one side of it to the other, in search of the stone: if it meet with a hard body, stop, and be convinced again and again, till it gives positive evidence both to the touch and ear. A stone is sometimes imperceptible from lodging under the orifice of the bladder, or in a fold of it; if so, pass a finger up the rectum, and press it against the neck of the bladder, as it were, towards its fundus, and alter the position of the body.

If all the symptoms concur without ulceration or induration of the prostate gland, or neck of the bladder, the search ought not to be entirely given up after the first and even the second time of trial. Too hasty a declaration in a matter of this kind has been known to injure the reputation of a practitioner. Some authors have laid down rules for judging of the size, shape, and number of stones, by the feel with the staff; but the business is of too difficult a kind to admit of certainty; therefore they deserve very little attention.

When a stone is positively discovered, it will be necessary to enquire into the state of the patient with respect to the probability of success attending the operation for extracting it. The principal objection to its immediate performance is, a fit of the stone in the kidney or bladder, which ought to be clearly removed before the attempt is made. The catheter was formerly used for searching, till Mr. Sharp recommended the steel sound, which, from its solidity, renders sensation much more distinct and clear.

The patient, when plethoric, should lose a few ounces

ounces of blood; and be kept upon a low diet about a week before the operation of lithotomy, and take a gentle purge or two with oil and manna, at three or four days distance. A glyster ought also to be administered early on the morning of the operation. A purge a day or two before, with a glyster on the morning, together with a proper regimen for a few days, is sufficient preparation in most other cases.

LITHOTOMY.

Cutting for the Stone has, at different periods, been performed four different ways. The most antient method is described by Celsus, and was called *Cutting on the Gripe*; it was afterwards more commonly known by the appellation of *Apparatus Minor*, to distinguish it from that invented by *Johannes de Romanis*, and published by his pupil *Marianus* in 1524, which was called *Apparatus Major*, principally from the number of instruments made use of therein; the *Apparatus Altus*, first made known by *Pierre Franco* in 1561; and the *Lateral Operation* invented by *Frere Jaques*, in 1697.

The Lesser Apparatus, or cutting on the gripe, was done by introducing the fore or middle finger of the left hand, dipped in oil, into the rectum, in search of the stone, at the same time pressing with the right hand just above the pubis, so as to bring the stone to the neck of the bladder; then forcing and retaining it on the left side of the perinæum, above the anus, an incision was then made to the stone, which was turned out with the fingers, or a scoop: this operation was difficult to perform when the stone was beyond the reach of the finger, for want of a proper direction; and the vasa deferentia, and vesiculæ seminales, must have been often injured.

The Greater Apparatus. In this mode of cutting, a grooved staff was passed into the bladder, and the
convex

convex part of it was made to project against the left side of the seam in perinæo, and was kept in that position by one assistant, whilst another held up the scrotum. An incision was made from near the bottom of the scrotum, and continued to within about three quarters of an inch of the anus, in the course of the staff; then turning the back of the knife towards the rectum, the point was slipped forwards in the groove, a great part of the bulb was divided, and the incision was continued to the prostate gland: the beak to the gorget was then placed into the groove of the staff, and pushed through the gland, the rest of the urethra, and the neck of the bladder; these parts were then dilated by the fore-finger, the forceps were introduced, and the stone was extracted.

This mode of operating was reasonably objected to, on account of making a longer wound than necessary in the interior parts; the violent distention and laceration of the parts, and the difficulty of extracting large stones. In consequence of which objections, Pierre Franco is said to have introduced the High Operation.

The High Operation. This operation, after having been discontinued full 150 years, was revived in London in 1719, and performed as follows:

The patient being properly disposed upon a table, with his head lower than his breech, so that the abdominal muscles might be in some degree relaxed, a silver catheter, adapted at one end to a flexible leathern tube, was introduced into the bladder; the wind-pipe of an Indian cock was used by Mr. Douglass for this purpose; and the ureter of an ox by Mr. Cheselden: either of which was fitted to a syringe; by means of which apparatus, from eight to ten ounces of warm water, or barley water, were gently thrown into the bladder. As soon as the bladder was nearly filled, the catheter was withdrawn, and the penis was immediately tied round,

to prevent the return of the fluid. Heister says, that drinking small liquors would answer the purpose of filling the bladder equally well; if so, it deserved the preference, by acting upon the bladder more regularly than from injection.

The bladder being properly distended, an incision was then made with a round-edged scalpel, from three to four inches long, between the recti and pyramidales muscles, immediately above the ossa pubis, gradually dissecting down to the bladder, which part was easily to be felt just below the margin of the pubes at their symphysis; then pushing back the peritonæum, together with the intestines, the incision was continued into the most prominent part of the bladder. The fore-finger was then introduced, the wound was enlarged by a probe-pointed bistoury to the length of two or three inches, the ligature on the penis was removed, and the forceps were directed to the stone by the fingers of the left hand.

This method of operating was given up from the following objections: the peritonæum was sometimes unavoidably wounded, and the intestines protruded; the urine insinuated itself into the cellular membrane, and into the cavity of the abdomen, when the peritonæum was injured; both which accidents were the occasion of bad sores, excoriations, inflammation, suppuration, and sinusses. Besides, it was remarked, that few above the age of thirty, survived the consequences; the distension of the bladder was also thought injurious. These, and other attending ills, introduced the lateral operation, which has proved successful in persons of all ages.

The Lateral Operation. This was improved by Rau, Cheselden, and others. The inventor, Frere Jacques, was accused of being an ignorant necessitous monk; but in spite of invective, and the virulent reflections which ingenious and enterprizing men were

were subject to, at that time of day, it is acknowledged that he practised latterly with great success. The following is the method now pursued :

The parts being clean shaved, the patient is laid on his back upon a table, about three feet and a half, or four feet in length, two and a half in breadth, and three feet in height, and is properly secured by fixing the noose of a broad tape, about a yard and a half long, around each wrist, and with it fastening the hand, ankle, and foot, of the same side, together; also by further confining him with a double ligature passed under his ham, and round the back of his neck; his head is supported upon a pillow, and one or two more are placed beneath his hips, in order to raise the pelvis higher rather than the belly: his buttocks are brought just over the end of the table, an assistant on each side keeping his legs and thighs securely asunder, and a third person holding the body steady.

The operator then passes the grooved staff, and takes the opportunity of convincing himself and the assistants, or by-standers, that there is a stone; he then inclines the handle of the staff over the right groin, so as to fix the convex part of it against the left side of the perinæum, in which position it is held firmly and steadily, by the right hand of a skilful assistant, who may, at the same time, with his left hand, support the scrotum.

The surgeon being seated in a good light, makes his first incision through the skin and fat, beginning a little to the left of the seam, and continuing obliquely along the perinæum, rather below the anus, so as to leave off between that and the tuberosity of the ischium. When the teguments are divided in sufficient length, on which future convenience depends, the fore and middle finger of the left hand are inserted into the wound, pressing down the rectum with one, and opening the wound near the seam with the other.

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A second incision is then made in the direction and line with the first, through the muscles, so as to admit of feeling the prostate gland, and the groove of the staff; at which time it may not be amiss to rectify the position of that instrument. Then turning the edge of the knife upwards, its point is passed on the fore-finger of the left hand down to the prostate gland; still carefully depressing the rectum with the back of it, in order to avoid wounding the gut. The edge of the knife being still upwards, is then pushed laterally as possible along the groove of the staff, inclining the handle rather downwards, till the whole, or most part of the gland is divided; which division will be rendered more perfect by drawing the point of the knife back along the groove in the same line. Others direct the point of the knife to be carried on the finger, and inserted into the urethra, just beyond the bulb; also that the division be continued laterally up to the prostate gland only, then to make the further division with the cutting gorget; instead of which, when the gland is divided with the knife, the blunt gorget may be used.

The knife being laid aside, and the beak of the gorget being carefully guided by the finger nail into the groove of the staff, the operator standing up, takes the handle of that instrument into his left hand, and holding it firm, and with firm resistance, nearly at right angles with the belly of the patient, pushes the gorget along the groove into the bladder, which, if rightly passed, is followed by an efflux of urine.

The staff is now withdrawn, and the forceps are gently introduced into the bladder; but before this is done, it is a maxim with those who use the blunt gorget, to pass the fore-finger of the left hand into the bladder, in order to dilate the passage through the neck of the bladder, and, if possible, discover the situation of the stone. The finger withdrawn, a pair
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of proper sized forceps are gently introduced along the course of the gorget with the blades shut; the gorget is then taken away, if of the cutting kind, carefully, and in the direction it was entered.

As soon as this is done, the forceps are gradually opened, moving the upper blade on the inferior one, as if it were on the axis, from one side to the other, in search of the stone; which, if found to lodge behind the neck of the bladder, that part of it is to be elevated by a finger passed into the rectum.

The stone being fixed in the forceps, they are held firm by both hands, the thumb of the left hand being placed near the joint, by which means the stone is likely to be preserved whole. The extraction succeeds best by gradually increasing the necessary force, and by bearing downwards in the direction of the wound.

If a large vessel be divided, it will be proper to secure it by needle or tenaculum, before the stone is extracted; but such an accident seldom occurs to interrupt the progress of the operation. The difficulty of taking up the vessels is mostly owing to the external incision being too confined. When the vessels of the prostate gland bleed moderately, dry lint, or lint dipped in styptic, may be applied, and held some hours to the part; otherwise, a pledget of lint, and another of digestive, will suffice.

When the stone breaks into pieces, they should be taken away with the forceps; if they are very small, the scoop is to be preferred for that purpose. There are few instances of more stones than one, when that which is extracted is rough; on the contrary, if with a polished surface, more than one may be expected; on which account, the operator should be strict in his examination with the finger, or some convenient instrument, for others.

Should the patient be sick or faint after the operation,

tion, lighten the bed-cloaths, and admit fresh air; if he complains of pain low down the abdomen, within two or three hours after, and other symptoms of inflammation occur, have recourse to bleeding, emollient glysters, saturnine applications, or discutient fomentations, which latter are sometimes put into a bladder, and applied warm to the hypogastric region.

When the urine passes freely through the wound, it is a good indication that the deeper parts are in a favourable state; sometimes the orifice at the neck of the bladder is turgid and contracted, so much so as to prevent the exit of the urine without the aid of the catheter. The patient should be kept upon low diet for the first eight days, and a stool should be procured by glyster on the third day, to be repeated at discretion. Slips of plaster should be applied to the edges of the wound as soon as the urine passes rightly, with compress and T bandage. As soon as the symptoms will permit, it will be proper for the patient to be raised in his bed, to prevent the lodgment of urine about the adjacent parts. This wound is treated after the general method, except that after the first dressing or two, it will be necessary to be guarded against pressing the pledgets in too deeply, or applying them too superficially, both extremes being likely to produce a troublesome sore, if not a fistula.

Excoriation of the buttocks, &c. may be prevented by placing a dry doubled sheet, of proper thickness, under them, and occasionally repeating it. Linen dipped in oxycrate and brandy, or anointing the parts with Goulard's cerate, or saturnine ointment, are generally useful on such occasions.

The following circumstances ought to be particularly attended to by the operator.

That the incision through the integuments be made large enough, and low down towards the
4 buttock;

buttock ; also that the muscles be freely divided, to obviate the pain and necessity of cutting upon the stone, and to give a free exit to the urine.

That the incision be not made too near the scrotum, as that is likely to be followed by an inflation of the cellular membrane, and sometimes with more disagreeable circumstances: such as inflammation and tumour in the left testis, and abscess in the body of it.

That practical authors are divided in their opinions with respect to retaining a quantity, or discharging the whole of the urine, previous to the operation; and as the authorities in either case are of equal weight, it may reasonably be concluded, that it is a matter of no great moment.

That some principal operators still perform the whole of the incision with the knife only, and with great success; that others prefer the cutting gorget to the knife for the latter incision, perhaps with equal advantage.

That the opening in the urethra be made near to the prostate gland; and that the division of that body be made as laterally as the position of the staff will admit, in order to avoid injuring the rectum, the vas deferens or the vesiculæ feminales.

That when the stone is too big for the opening, it will be far preferable to enlarge the incision through the integuments, muscles, or prostate gland, as laterally as possible; whilst the stone is brought forward and held firm by the forceps, than to risk the laceration of the parts. Or when such means are not practicable, to endeavour to crush the stone, and remove each particle with the forceps, finger, and scoop.

That instances have happened contrary to the received opinion, where more than one rough stone has been taken from the bladder at one operation, and not more than one smooth one was to be found. Search, therefore should be indiscriminately made
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immediately after the extraction of every stone; which may be done with the finger, female catheter, or a convenient solid instrument.

That in the lateral operation the most remarkable parts wounded are, the musculus transversalis, penis, the levator ani, and the prostate gland: in the old lateral way, or apparatus major, the urethra was wounded two inches on this side the gland, and the gorget and forceps were forcibly pushed through the rest of that passage.

EXTRACTION OF THE STONE IN WOMEN.

Women are probably as much subject to stony concretions as men; but the urethra is so short and dilatable, that small stones will easily pass from the bladder; and few there are that grow to such a size as to require manual assistance.

Females have been relieved from the stone in the bladder, by simple dilatation of the urethra, with gentian root, sponge tent, and other such means. Extraction has been performed by simply passing the gorgeret into the bladder, upon the director, distending the neck with the finger, and introducing the forceps. Instances are recorded wherein the bladder was opened through the upper part of the vagina, and the forceps were passed for the stone through the opening: but such means have been long laid aside, and the following mode of operating is justly preferred, both for ease and safety.

Let the patient be placed and secured, as directed in the lateral operation; pass a grooved director, or staff made for the purpose, through the urethra into the bladder; hold it firmly in the left hand, with the groove placed so that the cut may be made on the left side, obliquely slanting; then with the right hand, fix the beak of the cutting gorget into the groove, and push the end gently along into the bladder: search for the stone with the finger, and extract with

the forceps. Should the stone be large, and the neck of the bladder be brought forward during extraction, it must be released, by cutting through that part upon the stone.

The patient should be treated, both before and after the operation, in the manner prescribed for the male subject. The dressings repeatedly to be applied with cloths dipped in vegeto mineral water: in languid habits, warm fomentations are preferable.

STONE IN THE URETHRA.

Small stones are often met with in the urethra, and are attended with extreme pain, inflammatory symptoms, and a partial or total suppression of urine. If the obstruction is of long standing, and the symptoms are alarming, every means should be applied for relief as soon as possible. The patient, if plethoric, should be bled largely, and be repeatedly immersed in the warm bath; oil or mucilaginous injections must be thrown up the passage, and thebaic tincture, with essence or wine of antimony, should be fully administered. By thus relaxing the habit, stones of some size have been gently pressed out of the urethra.

When a stone is absolutely fixed in some part of the passage, it must be cut upon and extracted. When it is felt at the neck of the bladder, the two first fingers of the left hand are to be introduced into the rectum, in order to press the stone forward into the urethra, and resist the incision; which is to be made in proportion through the teguments and urethra. The stone may then be pushed out by the fingers in the rectum, or removed by a small pair of forceps, probe, scoop, or hook. When the stone is lodged further into the urethra, it may easily be cut upon, by pulling the skin over the glans as far as possible making a longitudinal incision down to the stone in full length, turning it out, and slipping the

the skin back into its former situation; by which means the urine is said to be prevented passing through the wound, particularly if the incision be made laterally into the urethra, and the wound is likely to heal by the first intention; some object to slipping the skin forward, as tending to produce the very ill it is intended to prevent.

When the stone is situated near the glans, or the opening of the passage, it may sometimes be pressed or picked out.

In consequence of some part of the urethra being perforated, stones have been known to lodge in a kind of sacculus, formed in the cellular membrane, and to increase considerably: these are to be cut upon the whole length of the tumour, and may be easily extracted. Wounds of this kind are known to have healed much sooner, by bringing the edges together with the twisted suture, passing a bougie up the urethra beyond the incised part, and retaining it in the passage for some time together every day. Two singular instances of stones formed in the urethra, are taken notice of by Mr. Warner, and Mr. Gooch, in their useful publications of Cases in Surgery.

NEPHROTOMY.

It sometimes happens that one or more stones form in the pelvis of the kidney, and acquire too great a size to pass into the ureter; in such a case the pain is severe, and a dreadful train of symptoms generally ensue. Inflammation and supuration in the kidney are mostly the consequences, and the abscesses burst externally; from which a quantity of fabulous and stony particles are discharged. From accidents of this nature, the old surgeons suggested the operation of cutting through the teguments and muscles, and directed an opening into the kidney itself, sufficient to dislodge the stone.

But the difficulty of ascertaining a matter of this kind, as well as the evident danger of such an operation, forbid such enterprises.

It is not improbable that most of the boasted performances of this kind, have been nothing more than the common opening of an abscess, which formed and pointed in and about the kidney; and from which calculous concretions were discharged or extracted.

OBSTRUCTIONS IN THE URETHRA.

DESCRIPTION. This complaint was not long since attributed to a caruncle or fleshy excrescence growing in the passage; but upon repeated dissections of the part, scarce an instance of the kind has been found to exist, except a small tubercle at the extremity of the urethra. Many surgeons have considered it as an enlargement of that kind of tubercle, which is natural, at the extremities of the vasa deferentia, and is called *verumontanum*, or *caput gallinaginis*: but this does not explain itself in every case, the impediment being not confined to one place. It has been clearly demonstrated from various dissections, that the most general causes are, thickness and contraction, which affections have happened in different parts of the passage.

In this disorder the urine generally comes away in a small stream, which gradually lessens, and is sometimes forked in its exit; particularly, if the complaint is situated near the extremity of the urethra; the patient is often endeavouring to make urine, and mostly with great pain and difficulty: the disease increases by slow degrees, occasions great irritation, and some inflammation, and if not timely relieved, will proceed to a total suppression.

CAUSES. Chancres, ulceration, and cicatrix; thickness, and enlargement of the *corpus spongiosum* of the urethra, and stricture; the untimely and improper

proper use of injections; callosity and scirrhus of the prostate gland, or the neck of the bladder, and obstinate gleet; all which most frequently proceed from gonorrhea, or venereal taint. Inflammation and abscess may also be the causes of such obstructions.

CURE. When thickness, scirrhus, stricture, or ulceration, are the causes, whether originating from venereal inflammation or lues, a gentle mercurial course will be necessary. The following method has been successful in several instances:

Hemlock leaves properly dried and powdered, or extract of the same, from four to ten grains; calomel finely lœvigated, from one to two grains; make these into small pills for one dose to be taken every night at bed time.

The decoction of Sarsaparilla, of the woods, or of Bark, may be occasionally given agreeable to the nature of the habit. A gentle purge should be now and then administered, and the course must be suspended if the mouth be much affected.

The proper applications to heal with, or remove the obstruction are, the medicated candles, or bougies. The distension and compression which they are intended to keep up at the part affected, may be increased by gradually altering the size. This instrument when extremely small, may be made to pass through the most contracted part, by frequent gentle applications, such as turning it round or slowly passing it forward, and gently pressing the end of it against the obstruction. It will sometimes require a little force to overcome the impediment, which ought to be exerted or not, according to the degree of irritability in the passage; and in such instances, the bougie must be of a middling size. When the part is a little inured to the application, it may be suffered to remain some time in contact with the diseased part, the benefit increasing in proportion

to the length of time it can be retained so, without exciting much irritation.

Bougies are made of different sizes, from that of the knitting needle up to the large catheter; they were formerly made with wax, and a wick in the middle, after the manner of candles, but the best are composed of pieces of fine rag dipped in a mixture of common plaster made with the purest oil, and a portion of fine wax sufficient to give it a proper consistence, then rolled up in due form and size.

The elective quality of ulcerating or healing, which was ridiculously attribute to Daran's bougies, can never be admitted; yet experience has proved, that Lallier's, of Rathbone-place, are much easier to be borne than others, and in some instances have been more efficacious; particularly in an obstinate case of stricture in three different parts of the urethra, which twice within the space of three months had been attended with inflammation, extreme pain, and total suppression of urine. The patient was each time with difficulty relieved, by repeated bleeding, warm bathing, enemas and opiates, also mucilaginous and diluent drinks. The use of bougies of the most bland kind, had been attempted several times to no good purpose. After the second inflammation had abated, Lallier's bougies were gradually introduced, and in about three weeks were worn with the greatest ease, and in little more than three months every obstruction was removed. A very small catgut has been sometimes introduced preparatory to the bougie.

Sometimes the bougie occasions too much irritation, so as to excite a copious secretion of mucus; when this happens, its use should be discontinued, at least for a time. There are instances and times when even the introduction gives intolerable pain, whence it must appear that the use of this profitable instrument requires great care and management. Bougies charged
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with escharotics were formerly used; but as they were used without either guard or guide, and were not strictly confined to the diseased part, they fell into disrepute. Great objections therefore were made to the use of the caustic, yet it is well known, under proper management, to have been efficacious in some of the most dangerous cases. The late Mr. John Hunter, a surgeon of the greatest eminence, to whom the world is indebted for many discoveries, contrived an instrument for the safe conveyance of the lunar caustic to the part affected only, and in his valuable Treatise on the Venereal Disease, has given the following directions for this bold practice.

When a bougie can readily pass, there is no cause for using any other method. The caustic may prove necessary when the stricture is too tight to allow of the smallest bougie to pass, or where the passage is quite obstructed; particularly when the urine has burst through the urethra in consequence of an obliterated passage.

A piece of lunar caustic scraped to a proportioned shape and size, is fixed in a small port-crayon fastened to a wire, this is introduced through a strait or flexible canula previously passed up the urethra, as far as the stricture. The application of the caustic need not to be longer than a minute, and it may be repeated every, or every other day, allowing time for the slough to come off; or for an abatement of the inflammation, irritation and spasm brought on by the use of the caustic, which often occasions a total suppression of urine for a time; against which, all the means commonly used on such occasions to procure relief, must be employed. If the patient can make water immediately after the use of the caustic, it will be proper to wash away any particle of caustic that may have dissolved in the passage; water injected into the urethra will not do quite so well.

Inflammation and abscess, are to be treated after the method generally prescribed under those articles, except, that in these parts, it is the duty of the surgeon to discharge the matter as soon as it appears to be formed,

SUPPRESSION OF URINE.

This disorder may arise from various causes, and is mostly alarming and dangerous. From compression at the neck of the bladder, through pregnancy, or adjoining tumour; want of energy in the acceleratores muscles, and weakness of the bladder from over distension; under which circumstances, the catheter is generally used with success; irritation or spasm, from stones in the bladder, or urinary passages, ulceration, morbid thickness or stricture thereof; and what is most terrible of all, inflammatory stricture, which is commonly attended with extreme pain. Should repeated bleeding, opiates in large doses, injections, the warm bath, and such like treatment prove useless, and every attempt to pass the catheter be of no effect, the only resource is, provided the bladder be painfully distended, to make an opening into the bladder: the distension may be positively ascertained by a round tumour to be felt just above the ossa pubis. Some suppressions originate in the kidneys and ureters, on which occasions the bladder is mostly empty, and its neck is much constricted.

Surgeons are divided in their opinions with respect to the most proper part for perforating the bladder; some are for doing it just above the symphysis pubis, others prefer passing the trocar just above, and a little to the left of the prostate gland; the perforation is also advised to be made through the rectum, or through the vagina.

The higher operation is recommended by Mr. Sharp,

Sharp, in preference to that in perinæo, because of the difficulty which he says there is in guiding the instrument into the bladder, and the danger of keeping the canula the necessary time, in a part so much inflamed and thickened: but experience proves, that the inconveniences are not so great in that respect as they are represented, and that the urine passes off more freely by the perinæum, than above the pubis: also, that the canula may be lodged, occasionally taken out to be cleaned, and returned with no great difficulty, at the inferior orifice.

The different operations are thus performed.

That above the ossa pubis, by making an incision two inches long, through the teguments and muscles, and perforating the bladder with the trocar, about an inch, or rather more, above the symphysis. The perforation with the trocar has been made with equal safety in that part, without previous incision. The canula is ordered to be not more than two inches in length; if longer, it is likely to injure the bladder when collapsed; if shorter, it will be difficult to keep it in the bladder: once in three days it will require to be cleaned; to do which, a stout probe should be passed through its hollow part, upon which the canula may be readily withdrawn and replaced. The canula is also to be fastened round the belly with tapes, passed through the rings at its verge.

To puncture the perinæum, which mode is preferred to the former, an incision is first made through the integuments, at a moderate distance from, and parallel with the seam, just beyond the bulb of the urethra, and the trocar is to be inserted rather to the left of, and a little above, the prostate gland; taking care to avoid wounding the urethra, and the parts which lie behind the neck of the bladder. Mr. Bell has contrived a certain method of discovering the immediate entry of the trocar into

the bladder, by forming a deep groove in that instrument, from its point up to the handle, through which the urine appears at the moment the instrument has entered the cavity. The canula is here also to be left secured and removed, as before.

Perforation may be easily performed through the rectum, but can hardly be done without either injury to the *vesiculæ seminales*, *vasa deferentia*, or ureters, all which lie at the back part of the neck of the bladder.

When women are troubled with suppression of urine, and cannot be relieved by any other means, perforation is to be made through the vagina, by introducing the left fore-finger into that part, and directing the trocar upon it, to a prominent part of the bladder, nearest to the mouth of the vagina. As the canula is to be left in the opening, it should be fastened by tapes to the T. bandage, made to pass over both the labia.

It will not be improper in this place to notice the ready use of the catheter with women. There is a particular delicacy required, on certain occasions, in passing this instrument, which every male practitioner should be able to comply with, and carries with it great recommendation: viz. the introduction of it into the *meatus urinarius*, without exposing the parts. This may be acquired with a little practice, by passing the end of the catheter along the finger of the left hand, to the point immediately below the clitoris; the opening of the urethra lying about a fingers breadth below that part near the verge of the *vaginæ*.

PRACTICAL SURGERY.

PART THE FOURTH.

INCONTINENCE OF URINE.

THE neck of the bladder may be so injured or weakened, as to lose its retentive faculty. It is sometimes a symptom of stone arising from irritation and stimulus, which is to be relieved by mucilaginous liquors, emulsions, and opiates: it may proceed also from a paralysis in the sphincter vesicæ, for which bark and steel, and cold applications, have been used with success: repeated applications of blisters over the os sacrum have also proved effectual. In such cases, or when it proceeds from laceration of the parts in the extraction of the stone, the jugum, or yoke, invented by Nuck, will have good effect. A steel truss, formed for compressing the urethra in perinæo, is also recommended by Nuck and others. Where pressure would be injurious, a kind of flat urinal, made hollowing to the thigh, has been worn with advantage.

Women are also subject to this inconvenience from like causes, but with them it most frequently originates from difficult labours. Pessaries made of sponge, or some light wood, and passed up the vagina, have answered well, where pressure was allowable.

IMPERFORATE ANUS.

Infants are sometimes without the natural opening at the anus; in which case, if one be not soon formed, the meconium will excite gripes, vomitings, swelled belly, convulsions, and death. When the part where the opening should be has the mark of cicatrix, or is covered with a thin membrane, protruded by the contents of the gut, an incision should be made about an inch in length with an imposthume lancet, or scalpel. If the part be closed up by a thick fleshy substance, or there be no mark for direction, the operation is both difficult and hazardous, especially if the rectum should terminate high up, towards the sacrum, near the bladder, or the vagina.

In an obstruction of this kind, an incision should be made sufficiently large, through the integuments; if the fæces do not follow, the finger is to be passed into the wound in search of the rectum, and a trocar, or narrow-bladed scalpel, is to be carefully directed up to the termination of the gut, upon the point of the finger, carrying the edge of the knife towards the os sacrum, for fear of wounding the bladder in males, and the vagina in females.

Dossils of lint should be repeatedly introduced, of proportionate thickness and sufficient length. The perforation may be easily kept open in slight cases, but if it be made high up, it will require the utmost care and attention, for several months, to preserve the aperture. A large silver or leaden pipe, sponge tent, gentian root, and such like applications, have been used for this purpose; but the distension and irritation occasioned by them give great pain; proper sized dossils of lint therefore are the best means for perfecting this work, and may be retained by suitable compress and bandage.

PROLAPSUS ANI.

DESCRIPTION. The rectum is sometimes partly inverted, both in adults and children; which complaint is termed a prolapsed anus. This part may be protruded to a great length, is often very painful, and appears with a dark fleshy aspect. When the disorder is of long standing, and the patient is of a relaxed habit, the difficulty lies in keeping it up after reduction, and preventing its return upon going to stool. The prolapsed part may sometimes remain a long time exposed, without incurring bad consequences, but from neglect of reduction, it is liable to inflame, swell, and mortify, and has been known to suffer an entire separation at the verge of the anus. Instances are recorded of the whole becoming cancerous.

CAUSES. Weakness, and relaxation of the sphincter muscle, dysentery, piles, tenesmus, difficult labours, costiveness, or whatever may stimulate the rectum to violent action.

CURE. The prolapsed part ought always to be reduced as soon as possible; and it may be easily done, when there is neither tumour nor inflammation attending it. The patient being placed on a bed, in a prone posture, with his buttocks raised higher than his body, the surgeon should force up the protruded end with one hand, whilst he presses in that part which is next the anus with the fingers of the other. If it be swelled and inflamed, apply cloths repeatedly dipped in camomile infusion and milk, or weak saturnine water, emollient cataplasms, &c. bleed also, and order cooling medicines and low diet; and postpone every attempt to reduce, till the symptoms are removed.

When relaxation is the cause, the best means for preventing relapse, are thick compresses and the T bandage; also, astringent injections made with a decoction

decoction of oak, or pomegranate bark : the truss, invented by the late Mr. Gooch, of Norfolk, or a small lump of plaster properly formed and wrapped up in a soft rag, may be applied externally, and secured with compress and bandage.

The bark and chalybeates should be administered internally, together with cold bathing. When the disorder is produced by dysentery and tenesmus, the starch glyster, with thebaic tincture, or tincture of opium, are proper ; if by piles, or costiveness, the remedies calculated to relieve those complaints.

TUBERCLES AND EXCRESCENCES IN AND ABOUT THE ANUS.

These tumours frequently infest the lower part of the rectum, and are denominated according to their figure and size ; among which are ranked, the condyloma, ficus, crista, fungus, &c. They generally form on the cuticle, are of a pale white, or reddish colour, and are sometimes broad and flat ; at other times grow out like warts, &c. in process of time they get connected with the cutis, and even the subjacent muscles.

They are most commonly caused by a discharge of vitiated ichor, or purulent matter, and are particularly observable about the private parts of both men and women that are affected with gonorrhea, or lues.

If small, and not much compressed at their basis, a slight insersion of savin leaf powdered, alone, or mixed with a small portion of calomel, or gentle touches with lunar caustic, will often prove effectual ; but the best and readiest method of cure is, at once to remove them by excision, and to touch the part from which they were extirpated with lunar caustic. A gentle alterative mercurial course will be necessary, when they arise from venereal affection.

HÆMORRHOIDS, OR PILES.

DESCRIPTION. When the veins in and about the rectum are distended with, or discharge blood, they produce the complaint which goes under the denomination of piles; and it is distinguished into two kinds, the *hæmorrhoides cæcæ*, or blind piles, and the *apertæ*, or open piles.

The blind piles are called so when the veins are so much distended with blood, as to resemble and equal the size and shape of peas, grapes, walnuts, or even pullet's eggs; they are also of a longitudinal form, appear livid, and feel like little bladders; they are sometimes soft and flaccid, and give but little pain; at other times, tense and inflamed, tormenting the patient in great degree.

The open piles are, when those swellings burst and discharge a quantity of blackish grumous blood, preceding or subsequent to the fæces, sometimes the distension and irritation are so great as to produce painful and obstinate stricture. After the burst is over, the discharge is more red, and changes to a serous and slimy state, the continuation of which is apt to impair the strength, and sometimes occasions a hectic or cachectic habit.

The common symptoms of this complaint are, a dull heavy pain in the head or loins, vertigo, a general listlessness, painful soreness and itching at the fundament, all which pass off as soon as the vessels burst. If the piles have remained some time distended before they discharged their contents, they become firm, fleshy-like tubercles, or tumours, bearing a dusky appearance.

Notwithstanding the suggestions of some very respectable authors, the hæmorrhoids must be reckoned salutary, in certain degrees, particularly in atrabilious and plethoric habits, and the use of repellents, or too powerful refrigerants, may be productive

ductive of much mischief. When they are simply caused by compression from obstructed fæces, or an adjoining tumour, as soon as the cause is removed, the effect will cease; but when the complaint is constitutional, temporary relief only is to be had, and that seldom without hæmorrhoidal discharge or topical bleeding. Instances are recorded of a regular monthly discharge from piles for several years together, in the male subject.

In weak or gross habits, it will be sometimes necessary to check this, otherwise salutary discharge, particularly when the tubercles bleed so profusely as to threaten dropsy, or cachexy. In cases of this kind, they are sometimes situated so high up the rectum as to be inaccessible to common means.

CAUSES. Compression from indurated fæces, costiveness, gestation, scirrhus, or other tumours in or near the rectum; sedentary and high living, constitutional plethora, &c. also, contraction of the sphincter ani on the protruding pile or tubercle, which occasions great torture.

CURE. The blind piles, arising from the three first causes, are generally relieved by gentle laxatives, such as cream of tartar, and washed flowers of sulphur, with electuary of cassia; sulphur troches, with nitre, &c. internally: externally, a liniment made of simple ointment, one ounce; and oil of box, once scruple, or with Goulard's cerate; poultices with white bread, or linseed meal, with or without laudanum, or a solution of opium in water may also be applied. When stiff, inflamed, or exceedingly painful, topical bleeding with leeches, or scarification with the lancet, is highly useful, and if the parts feel heated, sitting upon a hard seat gives comfortable relief. If the tumours grow so large as to obstruct the passage of the fæces, create great pain, and are situated within reach, extirpation will be necessary, otherwise they may degenerate into ulcer or fistula; in doing which, the ligation
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ture is to be preferred. When the basis is broad, if possible the double ligature should be passed through, and tied distinctly as on the scirrhus tonsil.

When the hæmorrhoidal discharge is too copious, or so frequent in its return, as to reduce the patient extremely, cooling and diluting medicines with the infusion, decoction, or juice of yarrow, the juice of nettles, decoction of bark with spirit of vitriol, and astringent injections, little in quantity, and often repeated, are likely to be efficacious. Should this kind of treatment fail, a silver or leaden tube wrapped round with soft rag, is recommended to be inserted into the gut, as is also the appendicle of the blind gut of some small animal, to be thrust up the intestine in the flaccid state, then filled, by means of a syringe with cold water, and tied quite tight at the open end; a piece of hog's gut, tied up at one end, may be made to answer the same purpose, towards compressing the bleeding vessels that are seated high up the rectum; but such as are within reach should be secured by the tenaculum and ligature.

FISTULA, *near to, and in the ANUS.*

DESCRIPTION. The appellation of fistula should be confined to sinuous callous ulcers, but its use is further extended to collections of matter formed upon the buttocks, and about the rectum; which, from that part being loosely enveloped with cellular and adipose membrane, are too apt to form sinuous ulcers. Disorders of this kind have different appearances and consequences, according to the nature of the patient's habit, and may justly be divided into two kinds, the incomplete, and the complete.

The incomplete, or abscess kind, attacks the patient under various forms; and by neglect, mismanagement, or some constitutional cause, may in time become truly complete.

One species of this kind makes its attack in form of a phlegmon, or circumscribed tumour, is at-

tended with much inflammation, soon suppurates, and is commonly critical.

Another begins with inflammation, which spreads about superficially; the part is not much tumefied, the skin appears of a dusky erysipelatous colour, the cellular membrane becomes sloughy, and yields but little matter.

A third is more formidable, and wears a gangrenous aspect. The cellular and adipose membrane are both much affected, the skin appears of a dusky red, and the whole of the teguments are but little swelled, give no great resistance to pressure, and form into distinct loose swellings, somewhat resembling the anthrax or carbuncle. The symptoms at first are, great thirst and restlessness, frequent chilly fits, with a full jarring pulse; in the progress of the disease, a numb, aching, shooting pain in the part, attended with incessant watching; the urine is dark and turbid, the pulse becomes quick, weak, and unequal, and the strength declines greatly. The integuments are gangrenous and sloughy throughout the diseased part, a small quantity of matter forms superficially, and sometimes a deep seated fore.

It often happens that this complaint has great influence on the bladder, vagina, urethra, and rectum; creating strangury, dysury, diarrhea, and tenesmus. Sometimes an abundance of pus and deep sloughs are formed about the rectum, with moderate symptoms; at other times, a slight hardness only is to be perceived near the anus, which suppurates gradually and painfully, and breaks with a small opening, discharging more or less matter, of good or bad quality, according to the cause and constitution.

In some instances, the matter borders close upon the rectum, perinæum, or membranous part of the urethra, and pervades them in one or more places. It has also been known to form high up in the pelvis, near to the os sacrum in venereal cases; and to

communicate with the prostate gland, producing great misery to the patient. An abscess is sometimes formed near the anus, and makes its way through the gut only, remaining entire externally, in which state it is called the blind internal fistula. Thus far relates to the description of sinuous abscesses in those parts, which are vulgarly termed fistulæ.

The true complete fistula is a deep seated, narrow, callous sore, or sinus, discharging a thin, acrid sanies, and most commonly proceeding from neglect, intemperance, mismanagement, or a bad habit. When it takes its rise from a sore formed near the vertebræ of the loins; the psoas muscle, or os sacrum, and is the effect of lues, scrofula, &c. forming sinusses round and into the rectum, and bursting at the anus; it too often proves destructive.

CAUSES. Fever, variolous matter, hæmorrhoids, hard-riding, intemperance, diseased prostate gland or urethra, and a bad habit, the true fistula is mostly caused by neglect or bad management.

CURE. No particular method of treatment can be laid down as suitable to every state of this disorder. Abscesses forming about the parts subject thereto, are not easily to be dispersed, neither is it adviseable in most cases to make the attempt, as they commonly afford necessary relief to the habit. The principal business of the surgeon then is, to regulate the inflammation, assist suppuration, discharge the matter by a timely incision, open sinusses, and heal from the bottom.

If the tumour is of the phlegmon kind, and the symptoms are violent, which is generally the case in sanguineous constitutions, bleeding and gentle evacuations will be proper, and the common poultice should be repeated every four or six hours; and as soon as suppuration is complete, an opening should be made of sufficient extent.

If the skin of the diseased part is of a yellowish
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cast,

cast, which is mostly the case in bilious habits, and the inflammation has spread wide with no great tumour, evacuations are not necessary. If it has a dusky appearance, the integuments become soft and pappy, and have but little sense of feeling, attended with languor, drowsiness, &c. as mentioned in the description, which mostly happens to aged persons and scorbutic or debilitated habits; also, when the disease arises from intemperance, evacuations are improper; instead thereof, cardiacs, the bark and red wine, and warm cataplasms, become necessary.

The strangury and dysury are to be relieved, by bleeding, if the state of the patient's constitution will permit, by nitre with gum arabic, or compound powder of tragacanth, mucilage of gum arabic and syrup of marsh-mallows in equal parts; solution of soluble tartar with manna in the almond emulsion, laxative glysters, and the like.

In retention of urine, bleeding, and the foregoing remedies are necessary; also opiates, bladders of warm water applied to the pubis and perinæum, the warm bath, oily and anodyne glysters, &c. Little good is to be expected from the use of the catheter during the inflamed state, or violent spasm at the neck of the bladder.

If attended with a tenesmus, a gentle laxative with oil and manna, and a few drops of laudanum, may be now then administered; also a thin starch glyster with the same drops, or opium dissolved.

In case of piles, or obstinate costiveness, bleeding and a cool regimen, ripe fruit, laxative oily glysters, the emulsion with soluble tartar, and frequent application of the common poultice, with or without a solution of opium, will be serviceable.

Should the patient be afflicted with a troublesome diarrhea, give the starch mixture or decoction of burnt hartshorn with an additional quantity of gum, tincture of opium, powdered rhubarb, and the like.

As soon as suppuration is complete, a free open-

ing should be made with the knife or lancet, down to the seat of the abscess.

If the intestine be much denuded, or eroded by the matter, which may be discovered by passing the finger up the rectum; and the probe externally by the fore; it will be necessary to lay both cavities into one; by dividing the gut with the bistoury, from the upper part of the abscess where the matter formed, or at least from the eroded part of the intestine downward, through the verge of the anus.

The curved probe pointed knife, or bistoury with a narrow blade, is the most convenient instrument for this purpose; which being introduced into the sinus, whilst the fore-finger of the other hand is up the intestine, the point is to be passed through the opening, if there be one, (if not, one may with little force be made) and received by the finger in the rectum, and directed downward by it, so as to divide the whole extent with the edge of the knife, from the part where the point entered, through the verge of the anus. Thus, by a simple and direct incision, the cavity of the sinus and intestine will, with great facility, be laid into one, and will mostly answer the purpose of a radical cure equally well as when part of the gut was removed, which was the method formerly practised, and is still persevered in by some country surgeons.

The same means will also prove effectual when the sore has burst of itself, and the gut is denuded, or so perforated that the matter discharges itself, both by the anus, and the orifice of the sore.

How far preferable this method to what is laid down by Le Dran, Cheselden, and other practitioners, who conceived it to be absolutely impossible to cure a fistulous abscess in ano, without extirpating a part of the intestine; first drawing out and retaining the parts for excision, by means of forceps, looped probes, and ligatures, and using probe scissars and torturing instruments to operate with.

The three distinctions made in this complaint are the blind external, the blind internal, and the complete ; which expressions meant to signify little more than the bursting or discharge by one or more orifices through the skin only, through the intestine without an orifice in the skin, or through both skin and intestine. The first and last are easily to be discovered ; the second, or blind internal, by matter issuing with the stool, and on pressure ; also, by the expulsion of air from the seat of the sore into the intestine, which is perceptible both to the touch and the ear. The seat of such an abscess may again be discovered, when the tumour is subsided, by discolouration in the skin and a kind of hardness, which a careful examiner can readily investigate by the touch. The hollow being thus discovered may be safely plunged into with an imposthume lancet ; after which it becomes complete, and is to be treated as before directed. Sometimes, especially when the adipose membrane is sloughy, and the skin is worn thin, instead of there being one opening only, several will be formed, all uniting in one cavity, though frequently mistaken for as many sinusses. When the openings are few, it will answer very well to lay them into one another, observing to remove the angular points, and make a longitudinal incision as before down the intestine ; but if the skin be loose or tattered, with many openings, it will be necessary to remove the whole of the diseased integuments.

In all these cases, the dressings should be of the mildest nature, and should not be crammed into the sore : a soft pledget of lint should be placed between the edges both of the external wound and of the gut, if divided, and a pledget of soft lint or tow spread with a bland cerate over all : afterwards a thin compress, and the T bandage.

In the complete fistula, as here represented, proceeding from distempered habit, neglect, uncleanness, and intemperance, it will be necessary to correct

rect or remove their general causes before the surgical part can be regularly undertaken. As soon as this is done there will be a visible alteration in the aspect of the sore and in the discharge. The sinusses ought then to be divided in such a manner as to prevent a lodgment of matter, and the longitudinal opening may be made down the rectum. The callous parts in the sinusses may be scarified with the knife or lancet, and red præcipitate rubbed fine, and mixed up in moderate proportion with a soft digestive or cerate, should be spread on soft lint, and applied thereto. If from a number of openings, or from the flabby, ragged, or indurated state of the edges near the anus, there can be no likelihood of healing soundly, such a portion as tends to impede the curative process, must be removed.

The dressings should in general be light, easy, and suppurative, and be repeated twice a day, or occasionally after a stool; to regulate which latter particular, a dose of rhubarb will be now and then of use. The suppurative process alone may be applied for a few days in the complete kind, and will tend to bring the diseased parts into a more regular state. Fungus in the sinus, as elsewhere, must be kept down by the lunar caustic.

Age, strength, constitutional or incidental disease should be particularly attended to, and rest and regimen must be enforced. Diseases of this kind happening in cachectic, strumous and venereal habits, are in general rather difficult of cure: but when they proceed from sores formed high up in the pelvis, they may be for a time palliated, but are mostly productive of a fatal decline.

FISTULA *in* PERINÆO.

DESCRIPTION. In this complaint is comprehended, not only the sinuous and callous ulcer in perinæo, but also sores which open into the bladder, scrotum,

and penis, discharging urine and matter, and being more or less hard, tumefied, and painful. Le Dran, in Obs. LXXVIII. gives an instance of successful treatment, wherein the scrotum and perinæum were much indurated and enlarged, full of fistulous ulcers and sinusses, discharging a mixture of pus and urine; and where the callosity in the part from whence the urine first burst forth, was full two inches thick.

This disorder were of times consequent to the bruising and laceration of the parts after the operation of lithotomy in the old way, but seldom occurs after the lateral operation.

CAUSES. Wounds, lacerations, and all such kind of injury done to the urethra and neck of the bladder; obstructions of long standing; inflammation and abscess; gonorrhea virulenta; callosities and ulcerations in and about the prostate gland from venereal infection, &c.

CURE. When this complaint takes its rise from obstruction in the urethra, the bougie is particularly necessary; every sinus must be opened to its full extent, and the portion of callosity, which is not likely to be reduced by suppuration and discharge, must be removed by the scalpel.

The best mode of operating on this occasion is, to pass a staff beyond the place whence the urine is discharged, which instrument is to be held firmly, whilst the surgeon makes an incision into and pursues the sinusses, with the help of a probe introduced at the external openings of the sore, which may serve as a director to the knife or bistoury.

A bougie or flexible catheter is generally introduced into the passage, beyond the part where the obstruction or sore extends to, and kept there to prevent adhesion or contraction, to wear down obstruction, and to divert the urine from the sore; many a desperate case of this kind has been thus cured; but the ingenious and experienced Mr. Bell declares, that both these instruments are unnecessary and

and injurious, except in obstruction, when the bougie is required as usual. It must undoubtedly excite much pain and inflammation to attempt the use of either, whilst the wounded parts remain turgid after the operation, but they must be of great use afterwards.

At first, it will be proper to place strips of lint lightly between the lips of each opening, and to apply a pledget of lint spread with soft ointment over the whole of the sore, with proper compress and bandage. If the edges be hard and tense, and do not seem likely to digest or suppurate, the cataplasm with bread and milk will be requisite, and a course of medicine should be pursued agreeable to the vitiated state of the constitution.

MORTIFICATION *of the TOES and FEET.*

DESCRIPTION. This complaint is mostly preceded by an obtuse pain in the foot and ankle; it generally appears first in form of a black speck at the end or on the side of one of the small toes; the cuticle is there detached, and the cutis is of a dark reddish colour; its progress is slow or quick, according to circumstances; the pain becomes more violent, and is accompanied with a sense of burning heat. If not checked at first it spreads from toe to toe, and sometimes suddenly over the whole foot up to the ankle, where it commonly stops for a while, and contaminates the whole mass of fluids.

CAUSES. The causes are in general, an acrid state of juices, and a languid circulation.

CURE. The treatment of this disorder is differently directed by men of the greatest skill.

One orders bark, cardiacs, warm antiseptics, and poultices, scarifications, and the removal of the dead part, fomentations, and strong digestives.

Another confides principally in repeated doses of
opium,

opium, and applications of the mildest kind; such as warm milk and the emollient poultice, and prohibits scarification, as well as the removal of the dead part, if in the least degree attached.

A third denies the good effect of opium when frequently and largely exhibited, and declares that it has a much better effect when applied externally; also, that much depends upon external applications, recommending an ointment of a thin consistence made with pitch, oil, and wax, to be applied; also an anodyne emollient cerate, compounded of diachylon, marshmallow leaves powdered, or linseed meal, opium, pitch, oil, and a little wax.

Experience has proved the following means to be efficacious, in a few instances where the toes were sphacelated. Opium in moderate doses, repeated according to the degree of pain and irritability; full doses of bark, and red wine or madeira as a cordial, a few grains of rhubarb occasionally, and a cataplasm made with two thirds white bread and milk poultice, and one third of the poultice made of strong beer grounds and oatmeal flour, the latter in greater proportion when the parts are sphacelated. Neither scarifications nor digestives were employed, and the parts separated of themselves. The good effect of the fermenting poultice made of wheat, flour, honey, water, and yeast, as mentioned under the article MORTIFICATION, have been also proved with the foregoing internal process.

VENEREAL DISEASE.

This complaint is said to have been brought by Columbus and his associates from America into Spain, in the year 1493, and was not long after disseminated throughout Europe, and its distant connections.

The virus by which it is communicated is different from every other infectious matter, and is more or less
malign,

malign, according to the nature of the constitution on which it acts. In hot, bilious, or irritable habits, it makes its appearance in a few days with great virulence; in the cold phlegmatic temperament, it lies concealed for some time longer, and is seldom violent.

It is divided into two states, the local, and universal; or, as they are otherwise termed, first and second infection.

A doctrine has been lately advanced which few surgeons would choose to practise by; namely, that the second infection cannot be generated from the first; possibly so, when the parts exposed to the virus are perfectly sound: one truth, however, is clear, that it is not likely to be so under proper management.

The terms local or first infection mean the sole affection of the genitals and the adjacent parts, which state of the disease is called *gonorrhœa* or *clap*; whereas universal or second infection signify, that the whole habit is vitiated; which state goes under the denomination of *lues* or *pox*. The virus may be communicated by the lips, saliva, nipples, genitals, &c. and first manifests itself on those parts by which it was received.

GONORRHEA VIRULENTA.

DESCRIPTION. The Gonorrhœa or Clap is an increased discharge of mucus, of an infectious nature, from the urethra in men, and the vagina in women; and is distinguished from other discharges by the following circumstances, conformable to the difference of sex. Involuntary erections of the penis or clitoris, fulness and uneasiness of those parts, great heat of urine, restriction of the frænum, and incurvation of the penis, phymosis, paraphymosis, chancres, verrucæ, and excrescences, bubo, hernia humoralis,

moralis, tumour, abscess, and fistula in perinæo, obstructed urethra, and weakness or gleet.

The general course of symptoms in men is as follows: about the third or fourth day after receiving the infection, the patient perceives a titillation and itching at the extremity of the urethra, particularly after making water, also a hardness and redness at the end of the glans penis, the orifice of which is more open than usual, with a rotatory motion of the testicles: soon after the linen begins to be spotted with a slight discharge of whitish ropy mucus, of which he is just able to squeeze a drop or two from the end of the penis: heat and pricking pain in passing urine soon follow, the discharge becomes thinner, is more in quantity, and of a purulent colour tinged with green; the patient is now troubled with involuntary erections, a compressed sensation in the penis, strictured frænum, and incurvation of the glans and body of the penis, particularly when warm in bed; and the heat and pain is felt higher up in the urethra. Every symptom of inflammation still goes on, and the perinæum feels full, hot, and painful, particularly when sitting; the discharge is of a more green hue, and sometimes tinged with blood. Proper remedies having been administered, the symptoms gradually abate, the running grows thick, ropy, and white, and decreases in quantity; a stringy matter comes away with the urine, in which it is to be seen floating, a drop or two of gluey mucus now and then closes the extremity of the urethra, and the complaint soon goes entirely off.

This is the general order of the symptoms, yet liable to variation in different subjects. Other symptoms seldom appear, except from a high degree of inflammation or virulence, neglect, or mismanagement.

The progress of the disease is much the same in women, allowing for the difference of parts; but it is remarked, that the inflammatory symptoms seldom
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run so high with them as with men, and that the discharge commonly lasts longer.

The phymosis, paraphymosis, bubo, abscess, and fistula in perinæo, verrucæ and excrescences, and the obstructed urethra, have been already noticed under their particular denominations, together with their treatment; also the nature and cure of chancres, as specified under the article Venereal Ulcer. The hernia humoralis and gleet are the only symptoms then which remain unnoticed of the first infection, and are sometimes found to be the most troublesome.

Hernia Humoralis. When the discharge from the passage is suddenly checked, inflammation and tumour on the groin or testicle commonly follows; the latter is most likely to feel the bad effects of it, when the stimulus falls upon the seminal or spermatic vessels. The first symptoms of this spurious hernia, as it is called, are, a dull heavy pain in the testicle, and up the spermatic cord, and an enlargement of the epididymis; afterwards the testicle itself swells, the pain is more acute, and strikes up the spermatic cord into the loins; inflammation increasing, a phlegmon is sometimes the consequence, and, without proper care, may terminate in abscess, gangrene, or scirrhus, according as the constitution is inclined to favour inflammation, erysipelas, or œdema. The sudden stoppage of the running sometimes produces much pain and irritation about the anus, testicles, and neck of the bladder, without tumefaction; in which case the urine generally passes with great difficulty, and in small quantities: these symptoms are soon relieved by a dose or two of calomel and opium, which will allay the irritation, and enable nature to pursue her regular course.

Gleet and Seminal Weakness. These complaints may arise from relaxation, or ulceration in the lacunæ, the verumontanum, prostate gland, or excretory ducts of the vesiculæ seminales, which are frequently the

con-

consequents of a gonorrhea. The gleet is often produced by over-purging during the progress of the disease, the feminal weakness sometimes by other causes. When the gleet is the effect of relaxation, it leaves a speck upon the linen, appearing like a drop from the white of an egg; if it come from the glands in the urethra or the prostate gland, it is thinner, and serous; if attended with slight ulceration, it is more of a purulent cast. The gleet generally partakes of the two former only, and originates from weakness; but sometimes all the causes are conjoined, when it becomes a difficult matter to suppress the discharge. The complaint thus complicated has occasioned much debility, atrophy, tabes dorsalis; and miserable consequences; and all perhaps from a mismanaged gonorrhea in a weak habit.

CAUSES. The nature of the virus being concealed, we are under the necessity of forming our opinions concerning it from the effects; whence it seems reasonable to suppose, that it possesses a peculiar acrid quality; and there is sufficient authority to declare it infectious. The common mode of contracting this disorder is by impure coition; and it is supposed to happen after the following manner:

A small portion of the infectious matter being absorbed in coitu, is conveyed to the lacunæ of the urethra or vagina, produces stimulus sufficient to excite inflammation, and an increased secretion of the natural mucus, which mucus becomes tainted with the same acrid principle, and increases the excitement.

Buboes form when the inflammation and the virus, or its stimulus, extend to the inguinal glands, and often proceed from too early an use of astringents: phymosis, paraphymosis, and chancres, frequently arise from not keeping the parts clean, sometimes from the virulence of the matter, and violence of the inflammation; heat, pain, and ulceration in the urethra,

urethra, from the increased action of the stimulus; thickness and constriction, with their concomitant symptoms, from repeated inflammation, irregular cicatrix, or an untimely use of astringent injections.

CURE. The general indications of cure are, to abate inflammation, correct the virus, and restore the tone of the parts. The first stage, or the inflammatory symptoms, are to be treated as in other parts; bleeding, when the constitution requires it; gentle laxatives, such as purging salts dissolved in a large quantity of water, a solution of manna and soluble tartar in infusion of fenna, or the almond milk with gum, or the following electuary:

Electuary of fenna, an ounce and a half; powdered jalap, one dram; cream of tartar and gum arabic, of each three drams; syrup of roses, enough to form an electuary.

The bigness of a nutmeg may be taken every night or morning, for the purpose of keeping the body cool, and the bowels gently open, which is all that is required of laxative remedies. Refrigerants and emulcents are also necessary in this stage; nitre and sugar are generally given, dissolved in the common emulsion, or in a decoction of marshmallows; since nitre is too apt, when not covered with mucilaginous or demulcent liquids, to act as a stimulus on the inflamed parts. In the mean time, the parts, both internal and external, must be frequently washed with warm water, alone, or mixed with milk, or some kind of mucilaginous liquid. A thin mucilage of quince seed, or a little bland oil, may be now and then thrown up the urethra. Cleanliness is a material help to the cure; the cloths therefore which are worn to receive the discharge, should be frequently changed.

When the perinæum throbs greatly, apply cloths dipped in the vegeto-mineral water, at two or three different times in the day, and at bed-time; or a poultice

poultice with the crumb of bread moistened with the same liquid. These, together with an opiate pill, will also relieve the cordee. When the inflammation is nearly subsided, and the discharge is still thin and acrid, the mercurial injection hereafter noticed, or a few small alterative doses of calomel, and now and then a piece of the laxative electuary, will be useful.

As soon as the running becomes ropy, of a good colour, and lessens in quantity, a few drops of balsam of capivi on sugar, and mixed with the mallow infusion, will be sufficient; otherwise, the bark and astringent injections may be used. The injections may be compounded of a grain or two of sugar of lead, white vitriol, or roch alum, dissolved in half an ounce of water, or more, agreeable to the irritability of the habit, as these parts will be differently affected in different subjects. Such are the general symptoms, causes, and rational modes of treatment in this stage of the disease; but unfortunately for many, too much stress is laid upon the speediness of the cure.

Some bold practitioners, yielding implicitly to the doctrine mentioned at the beginning of this article, and presuming upon a few instances where the virus has had a trifling effect, have ventured too soon upon the use of astringent injections. Others have been more enterprising in their practice, by aiming to preclude the disease with injections, prepared of a very small quantity of the caustic lixivium, diluted with such a proportion of water as, upon applying the solution to the tongue, shall communicate the slightest degree of warmth; some of which is thrown into the urethra, up to the first seat of the disease, immediately after the probability of an impure coitus. But from the degree of heat and pain in the passage, which has followed its use with some habits, when it has been of sufficient strength to excite the discharge of mucus necessary to carrying

ing off the virus with it, particularly in debauchees, the preventive remedy has sometimes proved more injurious than the disease itself might have been.

To obviate the mischiefs which have been known to attend such practice, and the unnecessary application of them, it cannot be amiss in this place to insert the following recipe, which has been celebrated as a powerful antidote, when applied immediately upon the appearance of the first symptoms; that is, just before the running, even when a drop of mucus has first lodged at the end of the passage; but with submission to the first authority, it may be more worthy of confidence after the inflammatory symptoms are dispersed, as a cleanser and astringent, than a preventive. This remedy should also be cautiously applied, agreeably to the irritability of the part.

Corrosive sublimate, mercury, hydrarg. muriat. one grain, to one or two ounces of distilled water.

A small portion of this solution made warm, in the first instance, is injected into the urethra, compressing the part just below the frænum, so as to prevent any of the liquid from passing beyond the first seat of the disease in the urethra. It is repeated according to the effect it was intended to produce; namely, moderate irritation, and an increased secretion of mucus; if the parts feel extremely tender, it will be proper to alleviate the irritation by injection of warm water, or bland oil; observing the same precaution in compressing the parts so as to confine the liquid within the upper part of the urethra.

Most of the principal modern writers on this disorder are of opinion, that the gonorrhœa is local, and that the lues cannot be generated therefrom but by an abraded or ulcerated surface. Dr. Nesbit, in his *First Lines of the Theory and Practice in the*

Venereal Disease, thinks the chief indication, at the first appearance of it, is to subdue the irritability of the parts; to which end he uses a strong solution of opium in water, bland oil, or mucilage of quince seed; a small portion of which he injects up to the seat of the complaint, every two hours at least, retaining it there about half a minute each time. This process, he says, will produce a quick effect on the symptoms, and that little else will be necessary in slight cases; but that the running may continue troublesome in lax habits; when, supposing the inflammation to be yet trifling, he proposes mixing a slight solution of sugar of lead with that of the opium, or using the saturnine solution, if any further astringent be necessary.

Hernia Humoralis. The principal means for its relief and cure are, bleeding, topical with leeches particularly, agreeably to the nature of the habit, and the violence of the symptoms; laxatives, and refrigerants, with full doses of opium, or Dover's powder, lenient glysters, with oatmeal gruel, oil and honey; cloths dipped in cold saturnine water, or poultices with that and crumb of bread, sometimes of the emollient kind, after having exposed the parts to the steam of hot water, more particularly when the symptoms have been aggravated by a suppression, or sudden decrease of the running. As soon as the inflammation is subsided, mercurials are necessary, internally, or by inunction, in order to remove the inflammatory diathesis, or to resolve the hardness which generally remains in the epididymis, and sometimes in the testis itself.—Vide *Scirrhus* and *Sarcoma*.

When this complaint remains obstinate, a brisk vomit or two with ipecacuanha and emetic tartar, will sometimes occasion the symptoms to remit, even in the inflammatory stage. Should abscess or gangrene supervene, proceed as under those articles.

If, after all, the parts continue enlarged and indurated, which is mostly the case with the epididymis, the cortex, pills with cicuta and calomel, and the poultice with bread and milk, or linseed meal, and a moderate portion of the leaves of cicuta bruised or powdered, and of the scraped root, if in the winter, are likely to reduce the parts. After repeated relapses, the bark and cold bathing have had good effect on relaxed habits. Electricity has been serviceable in inveterate scirrhus of these parts.—*Vide Scirrhus.*

It will be indispensably necessary during the inflammatory state, for the patient to keep himself in a recumbent posture; and, at all times, to support the part in a bag-truss, or by means of a commodious bandage. Opiates must be occasionally given.

Gleet, and Seminal Weakness. The gleet is not easily to be remedied without regular diet, and restraining the passions. Strong exercise, high fauces, frequent venereal intercourses, &c. have often produced relapse, when the cure was nearly completed. If it arose from relaxation only, the cure is not difficult, but if the excretory ducts or seminal vessels be eroded, phthisis, or tabes dorsalis, is most likely to follow.

The mode of cure is the same in every state of this complaint. Ass's, goat's, or cow's milk, lime-water and milk, decoction of sarsaparilla and saffron, with bark and elixir of vitriol, will generally suffice in the gleet that arises from relaxation, attended with an acrid state of juices: the more powerful means are, terebinthinate, or balsamic medicines, with japan earth, kino, or dragon's blood, &c. bark and steel, tincture of steel in spirit of salt; also chalybeate water and claret, or red port; cold applications to the perinæum, or what is more efficacious, a proper use of the cold bath. The cure may also be greatly assisted by astringent injections made with a few grains of sugar of lead, white

vitriol or alum, and a due portion of water as before directed; also, the solution of corrosive sublimate, sufficiently stimulating to excite the slightest degree of inflammation and increase of the discharge; in using which, the pipe should be properly formed to throw the injection against the part affected. Bougies have been used with success in this complaint, but they are principally beneficial in thickness and strictures of the urethra; blistering the perinæum has also been serviceable. Dr. Dickson, in *Med. Obs.* vol. iii. relates the case of an obstinate gleet, that was at length attended with an incontinency of urine; a blister was applied to the os sacrum for relief of the latter complaint, and the bark in substance was plentifully administered; and before the blister was removed, both complaints ceased.

An obstinate and painful incurvation of the penis, or what is called the *cordée*, which continued many weeks after the cure of a gleet, has been cured by the application of a blister to the perinæum.

LUES, or POX.

The slightest degree of lues will, if neglected, become a matter of the most serious consequence; on which account, it is absolutely necessary to be acquainted with the various signs of the disease. They are distinguished into two kinds, viz. the pathognomonic, or certain, and the equivocal, or uncertain.

The certain signs or marks of lues are, spots, blotches, and eruptions on the skin, with a dusky copper-coloured basis; tubercles on most parts of the body, *corona veneris*, and *furfuracious* eruptions; ulcers on the tonsils, fauces, uvula, and nose; nocturnal pains, gummata, nodes, tophes, and ganglions; *exostosis*, *hyperostosis*, caries, fragility, or softness in the bones.

The doubtful symptoms are, disorders of the eyelids,

lids, eyes, and ears; fixed pain in the head, muscles, or joints; affections of the animal or vital functions, serpiginous eruptions, atrophy, phthisis, &c. all of which may, or may not, be free from lues.

Buboes, chancres, excrescences, and ulcers, may also break out in consequence of a bad habit, independent of a venereal cause.

Venereal Spots. These may be distinguished from any other spots, particularly from freckles, tan, or morpew, by not being confined to the face, neck, and hands, and having a copper-coloured appearance.

Tubercles and Eruptions are to be found on every part of the body, more particularly amidst the hair of the head. They sometimes suppurate, and turn to a yellowish pustule, or dry crusty scab, which, when surrounding the hairy scalp, goes under the denomination of *Corona Veneris*.

Venereal Ulcers in the fauces, tonsils, uvula, and nose, are commonly round and circumscribed, eat deep, and have a yellowish mucous slough at the bottom; they are also surrounded with a thin red skin, and in time, produce caries in the subjacent bones.—*Vide Ulcers.* These complaints are frequently accompanied with nocturnal pains, spots, and other venereal symptoms.

Nocturnal Pains have a jarring, shooting, rending sensation, and are deep-seated; they principally affect the periosteum, about the middle part of the cylindrical bones, and portend nodes, exostoses, &c. They generally come on as soon as the patient is warm in bed, and grow easier towards morning.

Gummatæ and Nodes. The first are tumours, or thickneses in the muscles, or their membranous covering; the last affect the periosteum only; the ligaments and tendons are also subject to tumours, which are called tophs and ganglions, and are ranked among the common symptoms; but these

are equivocal, except accompanied with nocturnal pains, or some other distinguishing symptoms.

Exostosis, Hyperostosis, Caries, and Spontaneous Fractures. These diseases may arise from a confirmed lues, and are preceded by a nodous swelling in the part. They chiefly happen on the cranium, or in the solid part of the tibia and ulna, and are accompanied with violent pains in the bone, without heat or redness externally. Sometimes mischief does not shew itself till the whole substance of the bone is corrupt.

The Equivocal, or Doubtful Symptoms, are generally indicated by a peculiar resistance of the complaint to common treatment; if, on such occasions, there be reason to suppose that the patient is free from scrofulous or scorbutic disorders, a venereal taint is the most likely cause; and the plan of cure should be regulated accordingly.

Buboes, chancres, excrescences, and ulcers in various parts, are already described as common to both stages of the venereal disease. When these complaints are consequents of the second infection, they are generally accompanied with spots, eruptions, nocturnal pains, nodes, or some other convincing type of the disease; they are also inclining to grow phagedenic, or fistulous.

CAUSES. Most instances of confirmed lues may be traced from a previous affection of the genitals; yet every humour, or particular mucus, may become a vehicle of the virus into the habit. It may therefore derive its origin from four different sources; neglected or ill-managed gonorrhea; the direct application of the virus to some raw or lacerated surface of the body; an immediate absorption in coitu, without a morbid affection of the genitals; and transmission from the parent to the child.

CURE. Various means have been employed in the cure of this disease. Much confidence was formerly placed in the virtues of guaiacum, china root, saffrafras,

sassafras, and sarsaparilla, separately or together; at length mercury, its real antidote under proper management, was brought into use; but from the timidity of the regular, and temerity of the quack, that remedy soon fell into disrepute. Afterwards, reason and experience evinced the excellence of that invaluable medicine in every stage of the second infection, or lues; and its peculiar efficacy, when introduced into the habit in a slow progressive manner, and joined with decoction of sarsaparilla and mezereon root, or of the woods.

Some physicians are still of opinion, that salivation is necessary in inveterate cases; whilst others maintain, that it is totally needless. One circumstance however is indisputably true, that the slow alterative course renovates as it were the animal functions; whereas salivation leaves them much debilitated. It has been generally supposed, that the habit must be fully loaded with mercury to effect a radical cure; whereas, the present mode of administering it proves the contrary, since a regular perseverance in very small doses is, in most instances, equally efficacious with the deepest salivation; and it is evident, that a complete cure has been often accomplished in an easy way by the alterative method, where the attempt by salivation would have proved fatal: Besides, it is possible in the one to keep up the patient's strength with a generous diet, the bark, air, and gentle exercise; which in the other, are necessarily prohibited. Preference then is certainly due to the milder mode of cure; and salivation being scarcely heard of except in hospitals, where it seems to be kept up by an exclusive privilege; we may fairly conclude, that the mild alterative course is the most approved practice.

The animal œconomy may be so impaired by a long continuance of the disorder, as not to admit of the use of mercury in any mode whatever; the

disease may also be complicated with scrofula, or scurvy; under all which circumstances, it will be proper to correct and strengthen the habit with bark, &c. previous to the use of mercury, and conjoined therewith.

The cure by salivation ought not to be attempted during infancy, extreme old age, or pregnancy; or in persons labouring under habitual diarrhea, or dysentery, great weakness in the nervous system, epilepsy, hæmorrhagy, fever, hectic, scurvy, scirrhus, or cancer in the womb, paralysis, &c. whereas instances of perfect recovery from the lues have been known under most of these particulars, by the mild process.

The principal remedies in the alterative course are the following:

Corrosive sublimate, or muriated mercury, ten or twelve grains; crude sal ammoniac, half a dram; distilled water, one ounce; mix well.

About ten of these drops contain a quarter of a grain of the sublimate, which dose may be given twice a day in full half a pint of barley-water, or decoction of sarsaparilla, made as follows:

Sarsaparilla root sliced and bruised three ounces, with or without mezereon root, two drams; boil in three pints of water to two. Or corrosive sublimate one grain; malt spirit two ounces; tincture of opium thirty drops. Mix.

A spoonful or two of this is to be given night and morning in a draught of the decoction, or barley-water. It is proper to observe, that the sublimate medicine is likely to create much pain in the bowels, if not covered well with a smooth liquid: should that be the case, a few drops of tincture of opium,

opium, in the drinks before-mentioned; or rice gruel, must be taken occasionally.

Or, Calcined mercury, from half a grain to a grain; præcipitated sulphur of antimony two grains; opium powdered, half or a fourth of a grain; conserve of hips, enough to form a pill: to be taken night and morning, with the decoction:

Or, Pure quicksilver two grains; conserve of hips one scruple, made into a pill, to be taken at bed time.

The method least injurious to the animal functions, is that of inunction. A scruple, or half a dram of the strong mercurial ointment, is to be rubbed every, or every other night, into the thighs or legs, in the course of the lymphatics, and continued for a fortnight after the symptoms have been dispelled, provided the constitution is equal to it, and the mouth does not grow sore; drinking a pint or more of the decoction of sarsaparilla, or of the woods, daily. The effect of the mercury by unktion will sometimes require to be assisted by one or other of the internal means, more particularly when the disease is at such a height, as to make a rapid progress in the constitution; and when it has violently attacked the soft parts in the fauces, &c. In all such cases, the sublimate solutions are allowed to take the quickest effect, without the hazard of rendering the mouth sore; but they are not so much confided in, for the radical cure, as the other preparations. If the gums be likely to become sore, the mercurial course should be stopped for two or three days, and a gentle laxative or two should be administered.

Cold must be guarded against, by wearing drawers and an under waistcoat next the skin, made of flannel in winter, and of calico in summer; gauze flannel stockings ought also to be worn under others.

A dram

A dram of bark, taken twice a day; together with the sarsaparilla decoction, will be a necessary auxiliary in delicate constitutions.

After this manner, mercury may be safely introduced, and continued, with the weakest constitutions; whereas, in slender hectic habits, when used indiscriminately, the remedy now and then has proved as bad as the disease: the pulse being greatly quickened by it, the body wasting, and the strength daily declining. In all such cases therefore it should be conveyed into the habit, as it were by stealth; that is, in small quantities, and by slow degrees, so as not to occasion too great stimulus or evacuation.

Salivation. The easiest and safest method of raising a salivation is, by inunction; and the course may be made slight or full, according to the state of the complaint, and the strength of the patient. Previous to either, it will be proper to use some preparatory means; such as bleeding in very plethoric habits, the warm bath and friction, a gentle cathartic, plentiful dilution, and a few suitable remedies to scorbutic or scrofulous habits.

The Slight Salivation may be brought forward by rubbing from one to two drams of the unguent made with equal parts of quicksilver and hog's-lard, into the thighs at bed time, every third, fourth, or fifth night, according to the apparent approach of the ptyalism, the signs of which are these:

A brassy or brackish taste, foetid breath, whiteness and tenderness in the mouth and tongue, quickness of pulse, heaviness and pain in the head, slight tumour in the cheeks and neck; which symptoms should be strictly attended to before every repetition of the unction; since by such precaution, more mercury need not to be rubbed in than will be necessary to promote a moderate flux of saliva; that is, a pint, or two pints at the utmost, in twenty-four hours: which quantity may, with proper care, be carried on without troublesome symptoms. A dose
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of salts may be interposed if restraint should be necessary; and on the contrary, should the spitting abate, or the disorder not give way, the frictions must be repeated at due intervals.

The patient need not be confined to his chamber, but must wear flannel, keep his throat and jaws warm, and be guarded well against cold.

The most suitable diet in this course is water or thin milk gruel, chicken, veal, or mutton broth, freed from fat; beef tea, pudding, and the like; meat, wine, and spirituous liquors should be carefully avoided, and the chief drink should be barley water, or milk and water. This method ought to be persevered in at least a fortnight after the symptoms had all disappeared.

A full Course of Salivation requires much more skill to regulate, since the unguent must neither be administered too precipitately, nor too sparingly; yet in full quantity to keep up a regular spitting. To effect this, not less than two drams, nor more than three of the ointment, should be rubbed into the ankles, legs, or thighs, every, or every other night.

After the second or third application, the state of the breath should be strictly enquired into; and if any of the signs already mentioned should come forward the unguent must be omitted, till the spitting has fully shown itself; if it be not regular in quantity a fourth application may be requisite, otherwise the salivation may take its course, unless it should still flag. When it breaks forth profusely, or much tumour and inflammation attack the head and face, fever rises, &c. it will be necessary to check the impetus, by bleeding, glyster, and a gentle purge or two. Small doses of nitre with gum also may be now and then given in a cup of almond milk or barley water. During this process the patient should wear a flannel shirt, with drawers and stockings of the same kind, a piece of flannel under the chin,

chin, and a flannel cap, and be confined to the bed or chamber.

If after the third or fourth rubbing no spitting should come on, it will be best not to endeavour to force it, but to let nature take her course, except throwing in a moderate quantity of the unguent at distant intervals.

It may be called a full salivation when three pints of viscid saliva flows from the mouth in the space of twenty-four hours; which degree of discharge should be kept up for a fortnight or three weeks, constantly supplying the patient with diluent liquors, and thin nourishing broths; after which term it may be suffered to decline.

In case of diarrhea or diabetes, give rhubarb in powder, diaphoretics, and opiates; the white decoction, and broths boiled with rice.

When the mouth is ulcerated, or the salivary ducts are choaked up with sloughs, let the parts be touched with honey, slightly acidulated with small spirit of vitriol or spirit of salt; also use gargles with common emulsion and spirit of nitre, or barley water with myrrh in it. Gummata, nodes, topis, or any local tumour should be anointed with a portion of the unguent every other day.

Particular care must be taken to keep the gums and teeth clean, and to wash the mouth and fauces frequently, with sage or balm tea, or barley water, sweetened with honey, or honey of roses, now and then adding a little red wine; this washing should be done before and after every draught of liquid. The patient ought also to be careful neither to swallow the saliva, nor to lie on one side long together, and, when sitting up, should incline forward: by observing which rules, deep ulcerations in the sides of the mouth, and the involuntary course of the saliva down the throat will be avoided.

During the severity of the course the most proper diet is of the liquid kind as before mentioned, and

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in its decline the patient may proceed by degrees, to pudding victuals, poached eggs, boiled chickens, &c. A gentle dose or two of opening physic will be requisite during the decline of the spitting. The best restoratives afterwards are, the bark, asses, goats, or cows milk, jellies, and country air: the constitution will also be much the better for a moderate course of sarsaparilla decoction, and the use of the warm bath once or twice.

For a more full account of the nature, progress, and cure of this complaint, see the second edition of Dr. Chapman's valuable abridgment of Astruc on the Venereal Disease, Mr. John Hunter's treatise, in one volume, quarto, with engravings of the diseases of the urethra, or Dr. Swediaur's Observations on the disease.

INOCULATION:

The adventurous resolution of the elder Sutton, and the great discernment and attention of Dr. Dimsdale, were the first causes of bringing this practice to its present perfection and success. Every objection to its safety and certainty is entirely done away, and it is at this time nearly reduced to as simple a process as in Turkey; where, we are told, it is the province of an old dame to conduct the whole.

Much stress has been laid upon preparing the patient two or three weeks before inoculation, with the most abstemious diet, mercurial pills or powders, brisk purges, and other evacuations: the time of life and season of the year have also been specified and directed; but all these rigid peculiarities, which did more harm than good, are happily set aside. A bleeding with some full habits may be found necessary, and mercury has great power over the disease. Some inoculators, in order to master it more completely, and obtain credit from its very
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favourable

favourable appearance, have ventured so far in the use of it for preparation, as to excite salivation. Such conduct deserves the severest reprehension, since it is needless with respect to the disease, and may do no small injury to the constitution.

A woman in Norfolk inoculated many hundreds after no other preparation than a spare diet from the time of making the puncture, and two or three moderate doses of salts, one of which she always gave on the morning after the operation, and another at the approach of the symptoms. Her practice was principally amongst farmers and husbandmen, whose food in common was of the grossest kind, very few of whom were much confined from their respective employments: and she boasted, perhaps with some reason, that none of her patients were ever hurt by inoculation.

The most that can be required towards preparing a person in tolerable health is, immediately after inoculation, to enter upon a low diet, such as tea and toasted bread, gruel with or without milk for breakfast; plain or plumb pudding and dumpling, with vinegar and sugar for sauce, bread or rice pudding, with or without currants; and apple pudding or dumpling, for dinner; persons of very languid and infirm habits being now and then allowed a piece of boiled chicken, or mutton, with turnips and potatoes; and for supper a roasted apple, turnip, or potatoe, raspberry jam or treacle spread thin on a slice of white bread. Their common drink may be toast and water, or milk and water; no wine, beer, butter, cheese, or meat, except the latter as before mentioned. A cooling purge or two may be administered within the first six days, and the body should be kept cool and temperate, during the eruptive fever particularly, by avoiding the heat of the fire or bed as much as possible, and taking a small quantity of a decoction of fenna with prunes, occasionally. Infants may be gently purged

once or twice with a few grains of rhubarb, and require a slight puke, or something opening, during the eruptive fever.

Scorbutic, scrofulous, and other chronic habits, have done as well as possible with no other means; yet when complaints of that kind are in great degree, they require particular attention. Some relaxed habits have profited much by a dose or two of the bark daily. It is sometimes thought necessary to give, according to the age of the patient, from three to ten grains of Dr. Dimsdale's preparative powder the night before the purge, and once at the time of the eruptive fever, when the symptoms are oppressive, which is compounded after the following manner:

Compound powder of crabs claws and calomel,
each eight grains, emetic tartar one eighth
of a grain, to be rubbed into a powder.

Bark and antimony are sometimes used as preparatives. In short, the best general direction that can be given for preparation is, to restore those that are much below the standard of health, and not to reduce those too much who are rather above it.

The chief prohibition to inoculation is at a time when inflammatory, putrescent, epidemical, or critical complaints, prevail. Teething also is considered as a strong objection to inoculation; but if the body is kept rather lax, and the symptoms are moderate, it may be more dangerous to defer it.

The best and most certain way of communicating the infection is, to take the matter upon the point of a lancet, fresh from a pustule, not too much matured on the diseased subject, and insert it immediately after into the arm of the person who is to be inoculated. Lint or cotton thread may be sated with the variolous matter, and kept close shut up from the air, in a vial or a small box, for future use; or it may be spread and dried upon a piece of
smooth

smooth glass. After having gently breathed upon the glass or lint, the least visible quantity of matter is to be taken on the point of the lancet, and introduced into one or both the arms by the slightest puncture, or by sliding the point horizontally between the cuticle and cutis, which last method is least likely to fail.

If on the second or third day after, a few circular peach-coloured pimples can be distinguished, with the help of a magnifying glass, on the edges of the puncture or incision, the operation has taken effect. Sometimes it inflames on the second or third day without displaying the pimples, and all disappears again; under such uncertainty, unless the edges should be inflamed again in two or three days, the operation should be repeated.

Pain and stiffness are generally felt under the arm on the fifth or sixth day, which is a never failing sign of the disorder taking place, and approaching; it is generally attended with remitting pains in the head, shiverings, heats, &c. these complaints continue till the eighth or ninth day, when the eruptions begin to appear, the whole of which is complete about the eleventh or twelfth day.

As soon as the eruptive fever begins, it is customary to give a few grains of the preparative powder, and pass it off with a gentle aperient. It is supposed that the famous Mr. Sutton's pill was of the same nature, which when the skin was parched and stiff, and a kind of eruptive heat or rash appeared, he used to repeat according to the strength of the patient, or violence of the symptoms. But the liquor of stewed fenna and prunes, or a few salts dissolved in a large proportion of water, sufficient to render the bowels gently lax, will for the most part answer equally well. Sometimes a few drops of ipecacuanha, or antimonial wine will be equally efficacious, by acting either as a diaphoretic or a gentle evacuant by puking or procuring a stool or two,
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particularly if the stomach is overloaded; which is often the case with children during the preparation, unless under proper restraint, and is sometimes the occasion of convulsions.

Balm tea or thin barley water, acidulated with the juice of Seville orange or with lemon, apple water, and small tea, are proper to allay both heat and thirst, during the symptomatic fever; and when the symptoms run high, cold water may be now and then given, if earnestly required.

At this period of the disease the patient should neither indulge himself with lying in bed, or sitting by the fire, but should be led or carried out into the air, be the weather bad or not, properly clothed and sheltered: which alone will most commonly abate the pains and feverish symptoms, and prevent an abundance of pustules. The aged and infirm may be allowed a little wine whey, or small red wine negus, if the pulse be languid, and a slight delirium should attend. Inflammation and maturation are mostly trifling, unless brought on or increased by preternatural heat and bad management; the body therefore should be kept in moderate temperature, during the whole of the process: a purge or two is commonly given when the pustules grow dry and scaly, and the patient should gradually return to his common food.

Thus it generally happens with the regular and favourable sort; but sometimes no symptoms appear till about the ninth or tenth day, or longer, and then they come on rapidly; the puncture wearing a purple aspect, with a narrow circle of dark reddish ichorous pustules, and a depression in the centre, which appearances will most commonly be regulated according to the state of the bowels at that time; if purging, to be checked; if costive, to be rendered rather lax: further treatment must be suited to future appearances. The untoward symptoms are most likely to attend upon the atrabi-

lious, erysipelatous, and scorbutic habit; but seldom run to any bad consequences, unless from too rigid a preparation, being over heated, or too loose texture of blood; in which last case the bark and antiseptics become highly necessary.

The following instance came under the author's care some time ago. A woman, aged 73, of an atrabilious habit, being in danger of catching the small-pox in the natural way, chose to be inoculated: her conduct had not been the most prudent during preparation, in which too much mercury had been administered. The eruptive fever was attended with delirium and a weak pulse, and the eruption was coherent, profuse, and remained flat in the skin on the fourth day, with a dark purplish hue. The bark with spirit of salt were freely administered, on the third, fourth, and fifth day from the appearance of the eruption, together with red wine, negus, and whey; upon which the inflammation had a brighter aspect, and the pock gradually rose and matured. She persevered more moderately in taking the bark and the muriatic acid, had a stool procured by glyster every other day, sucked now and then an orange, and took gruel with wine in it, and milk gruel, as nutriment, until the eleventh day, when the tumour began to subside; but the pustules continued a long time discharging, before they dried away.

She was more restless than common during maturation, which inquietude was sometimes relieved by syrup of white poppies.

From this case it plainly appears, that when the pock, from a deficiency of natural heat and vigour, remains flat, and is not disposed to mature, cordials and tonics should be timely administered to aged persons; and, indeed, in some weak debilitated constitutions, at a much earlier time of life, such treatment, in a moderate degree, will be found equally necessary at that period of the disease.

The following maxims are generally allowed:

That

That no other disease is conveyed into the habit with the variolous matter.

That it is of no consequence whether the matter be taken from a pustule of the natural or inoculated kind, from the mild or more virulent kind: since the principal advantages arising from this practice are, the proper disposition of the habit, and the mode of communication.

That the ichorous matter is more likely to take effect, than that which is nearly matured.

That the crude matter, taken from the puncture or incision, before the symptoms have appeared, may suffice.

That puncture is not so likely to inflame and run into a tedious unnecessary sore as incision, provided neither plaster nor any other covering is applied.

That the inflammation or pustules round the incision may be checked, by applying cold water to the part, or rubbing in a little mercurial unguent.

That the natural infection may be precluded by that from inoculation, perhaps up to the sixth or seventh day; the symptoms of the former seldom coming on till the fourteenth day after receiving it.

That keeping open the puncture or incision as an issue, is of no kind of use with regard to the disease.

And that the secondary fever very seldom attends the disease when communicated by inoculation.

ANCHYLOSIS.

This word, in its strict sense, has reference only to the crooked state of a part, but is commonly applied to the fixed state of a joint, more particularly when the bones are immoveably united or ankylosed, as it is technically called. Till lately this complaint was supposed to be principally occasioned by a concretion of the synovia. Gouty persons, with whom

the mucus of different parts is sometimes concreted, may be subject thereto; but in other cases, the seat of this disorder is either in the ligamentous or tendinous parts near or about the joints, or in the bones themselves.

The former complaints may proceed from the limb being a long time continued in one position, from inflammation with or without a diseased habit, and a consequent morbid thickness, and rigidity of the parts; the latter state is when the heads and epiphyses of the bones become diseased, either from external injury or a vitiated habit.

When it has originated from the limb being long kept in a particular position, it generally yields to relaxing or lubricating means; such as repeatedly steaming the part with warm water, and afterwards rubbing in some neat's-foot oil, or plunging it into the body of an animal when first slain, and holding it there as long as the vital heat continues; also at the same time rubbing it over with the greasy mucus that covers the guts. The removal of the thickness and rigidity of the parts is much more difficult; but such complaints are sometimes to be relieved by the means already prescribed under the article White Swelling. Warm emollient baths, pumping Bath-waters upon the part, the steam of boiling water impregnated with sulphur and aromatics applied thereto, or the fall of warm water thus medicated from some height, followed by friction with the flesh-brush or flannel, and frequent movement of the limb, have relieved the pain and heavy feel of the limb.

In such cases M. Morand strongly recommends a poultice made with powdered coal and water, more particularly for rigid and contracted tendons, proceeding from large wounds; and Dr. Lobb has advised bathing the contracted part three times a day, with a mixture composed of the yolk of an egg, and six spoonfuls of pure water.

SACCULI MUCOSI.

These bags are chiefly placed near the joints, and the fluid secreted therein serves to facilitate the motion of the compact tendinous parts, which play over the heads of bones, or upon one another.

Some practitioners not being sufficiently acquainted with the situation and connection of these bursæ or sacculi, have been deceived with respect to the discharge that flows from abscesses and wounds affecting them, and have falsely concluded, from its similitude to the synovia of the joints, and the contiguity of the injury to those parts, that it proceeded from within the capsular ligament. The discharge from the bursæ mucosæ is, in common, a thin fluid mixed with small concretions; yet in such cases no absolute decision can be made from the discharge alone: in order therefore to form a proper judgment of the nature and true seat of the sore, it will be necessary to attend to the violence of the symptoms, and to examine carefully with the probe. Tumours in these parts are mostly the effects of strains and bruises, give way to pressure more, and with much less pain than those which contain common pus, and are seldom attended with much pain; whereas, inflammation of the capsular ligament and joint, is attended with vehement pain, much fever, delirium, &c.

The seats of the sacculi, as enumerated by former authors, are as follow:

Deltoides. A large one situated under this muscle upon the acromion scapulæ.

Biceps Brachii. A small one investing the tubercle of the radius, which lies under the tendon of the biceps, and part of the supinator brevis.

Iliacus Internus and Psoas. A large thin one, under the tendons of those muscles, as they pass down to their insertions in the os femoris.

Latissimus Dorsi and Teres Major. One between the extremities of their tendons.

Glutæus Maximus. A large thin one, partly connected to the back of the trochanter, lying under the termination of the glutæus medius, and loosely attached to the rest of the trochanter, and the tendon of the glutæus maximus.

Glutæus Medius. A small one, between the termination of its tendon, and that of the pyriformis.

Glutæus Minimus. A small thin one, attached to its tendon and the trochanter major.

Gemini. A small one, between these muscles, and the end of the obturator internus, connected with both, and with part of the capsular ligament.

Biceps Cruris. One between the end of its tendon exteriorly, and the capsular ligament of the knee.

Semimembranosus. A small one, between its tendon, where it runs between the inner condyle of the tibia, and the capsular ligament.

Cruralis and Vasti. A large thin one, connected with the tendons of the muscles, and fixed to the patella, adhering also to the capsula of the joint.

Gracilis, Sartorius, and Semitendinosus. A large one, situated under the ends of their tendons, adhering to them on one side, and to the burfal ligament on the other.

Gemellus. A large one, firmly attached to its tendinous origin, to the end of the semitendinosus, and to the capsula near the interior condyle.

Soleus. A large one, between its tendon, where it passes over the upper part of the os calcis, and that bone.

Tibialis Anticus. A small one, fixed to its tendon, where it works upon the top of the foot.

Peronæus Longus. One under its tendon, where it works upon the os cuneiforme, on the outside of the foot.

Dr. MONRO, of Edinburgh, the late Professor, has thrown great light upon this subject: he says that the burfæ are numerous about the joint of the shoulder. That they are both numerous and large about

about the joint of the thigh, especially on the great trochanter, under the insertion of the glutæi, and also under other large muscles. That they accompany the tendons which run along the wrist and ankle, surrounding them like capsular sheaths; and are interposed betwixt the tendons and the skin, as well as the tendons and the bones: but that the largest are those about the joint of the knee, belonging to the quadriceps extensor cruris, where there are several two or three inches in length, capable of containing several ounces of fluid.

He also proves, that they resemble the capsular ligaments of the joints, consisting of the same coats, and having a similar secretion poured into their cavities. He has found in all about 140; 33 in each of the superior, and 37 in each of the inferior extremities: which is about 100 more, than were discovered before by Albinus and others.

OPENING A DEAD BODY.

The necessary apparatus for this operation is knives, a razor, a large and small saw, scissars and crooked scissars, elevators, needles threaded, sponges, tow, sawdust or bran, basins with water, towels, receivers, vinegar, and lavender-water.

The body should be laid upon a table of convenient height, and be decently covered; the contents of the cavities may be then examined or removed, as the nature of the case requires.

The *Head* is to be opened by making an incision across from ear to ear, down to the bone; then dissecting up such a portion of scalp from the skull, as will make room for the saw, turning it down over the face and neck. The saw is then to be set on at the middle of the os frontis, and carried round to each temporal bone, observing to end in the middle of the os occipitis. The divided part of the skull is then to be raised with the elevator, and its

connections with the dura mater should be occasionally divided, after which the brain may be carefully taken out, separating the attachments of the membrane as it becomes necessary.

The method of opening the *Abdomen* and *Thorax* together is, by first making an incision on each side of the sternum, in the course of the cartilaginous parts of the ribs, dissecting back the teguments two or three inches, and cutting through the cartilages with a strong-bladed knife, rather curved at its point. The incision is then to be continued from the sternum, obliquely over the abdomen, down to each ileum or inguen: after which the clavicles may be separated from the sternum, which bone being dissected from the mediastinum, may be turned downwards together with the abdominal covering.

To remove the *Viscera* of the *Thorax* and *Abdomen* together, it will be necessary first, to divide the *diaphragm* down to the spine on both sides; when two very strong ligatures should be made at a proper distance from each other, round the *œsophagus* and *large blood vessels*, including the *trachea*; then observing carefully to divide these parts between the two ligatures, the same is to be done with the *inferior vessels*, a little above the *bifurcation* of the *aorta*, including the *vena cava*, and upon the *rectum*. The *viscera, with the diaphragm*, are then to be closely dissected away.

If the *viscera of each cavity* are required to be separately removed, the ligatures upon the vessels must be made just above and below the diaphragm.

To open the *abdomen only*, a longitudinal incision is generally made from over the *ensiform cartilage* to *symphysis pubis*, intersecting it at right angles, with another at the navel, so that the different sections may be reversed, and the contents be properly exposed.

The parts are to be neatly and regularly sewed up with the glover's stitch,

Great care is necessary, upon all occasions, to correct the putrid effluvia, which may be generally done by spunging the parts with vinegar and brandy, and sprinkling them with lavender or hungary water. When the body is extremely putrid, more powerful means are required to defend the surgeon from its noxious effluvia, such as stopping up the ears and nose, and being frequently enveloped with the steam, from a strong solution of myrrh in vinegar, by repeatedly pouring that, or the gum itself, on an ignited iron, or common heater placed in a fire pan, or such like receptacle, and now and then gargling and washing the mouth with brandy.

EMBALMING.

The surgeon is very seldom called upon to perform this office, except upon the death of some great personage; yet it cannot be thought improper in a book of this kind to give some account of the means which were said to have been used abroad on such an occasion.

The face and hairy parts being close shaved, and the contents removed from the thorax, abdomen, head, and orbits of the eyes, each cavity was well cleansed with vinegar and water; and after the moisture in every part had been perfectly absorbed by sponge, and the whole wiped dry with warm cloths, the inside of each was washed with a solution of ambergrease, in hungary water, and filled with the composition hereafter mentioned, grossly powdered; after which the eyelids were closed, and the rest of the cavities were stitched up with the glover's suture; the mouth was also well cleansed, and filled with the powder: the whole of the external surface was then lightly rubbed with essential aromatic oils, in which a little ambergrease had been dissolved, and covered with proper cloths and rollers spread with a cerate, composed of resin, wax, gum storax, and

and sheep's suet; a double stay, spread with the same, was also spread under the chin, and fastened upon the upper part of the head. The brain and viscera well cleansed, and covered with the aromatic powder, were put into a leaden chest, and foldered down; and the heart, after being properly cleansed, and its cavities well filled with the powder and sewed up, was placed in a silver urn.

Incisions have sometimes been made into the fleshy parts, which were first cleansed and properly filled with the powder, afterwards covered with the rest of the body.

Mr. Gooch prepared his cere-cloth with wax, resin, storax, and painters drying oil; which composition being made of a fit consistence, and heated to a proper degree, he ordered to be laid on with a brush in moderate thickness, to which a faint flesh colour might be given with vermillion; and proposed this covering, when cold and stiff on the part, to be lightly struck over with hard varnish; he also thinks, that a varnish of that kind, thickly applied, might be used alone. He advises a cap to be well adapted to the head, with a flap falling down upon the neck, and to be sewed under the chin; and a few circular turns to be made with a broad roller round the neck: all the rest of the corpse to be inclosed in a sheet artfully cut, and sewed on very close and smooth; with the finest herring-bone seam, then dressed and placed in the coffin.

POWDER FOR EMBALMING.

Lavender and rosemary flowers, each four pounds; the tops of wormwood, Arabian stachas, southernwood, with the leaves of the Syrian mastiche, aloës-wood, and calamus aromaticus, each three pounds; of the gums, myrrh, storax, benjamin, frankincense, and the bark of cassiafras, each one pound;

pound; nutmegs, mace, cloves, and cinnamon, each two ounces. Mix, and make into a gross powder.

It will be rather difficult to procure every herb or flower of this receipt in exact quantity; if so, the best substitutes will be such as are most fragrant. A few of the fragrant herbs, and gums in due proportion with the above quantities, will answer the purpose equally well, and be more convenient as to expence, on less particular occasions.

DISORDERS AND OPERATIONS PECULIAR TO WOMEN.

DISORDERS OF THE BREASTS.

These like other soft parts, are subject to inflammation, both from external and internal causes. When proceeding from external injuries, the part is more likely to prove scirrhus than to suppurate, particularly if they affect the glandular part of the breast.

Milk-fore. The inflammation which attacks the breasts of women, most commonly happens soon after delivery, particularly if the lochia are prematurely suppressed, and the fluids are too copiously derived to the breasts to admit of a regular secretion, or an easy exit. The breast in that case begins to grow turgid, is hot and throbbing, and distinct hardneesses are to be felt; which if not timely prevented by art, or relieved by an efflux of the secreted fluid, are very likely to proceed to maturation. This kind of inflammation will, at any future period during the time that the woman continues suckling, be subject to suppurate upon slighter occasions.

Sometimes, for want of due maturation, small tumours or knots, remain in the cellular or adipose mem-

membrane, and the glandular part is obstructed and grows indurated; which by neglect or mismanagement, have laid the foundation for an incurable scirrhus. Such indurated tumours differ much in their nature, shape, and general consequences; those of the cellular and adipose membrane, being of an irregular form, not much attended with pain, or very hard, and seldom adhering; whereas those in the glandular part are of the true scirrhus kind, round, or oval, and very hard to the touch. The former are often relieved by topical applications, the latter most frequently require excision. These kinds of tumours are therefore of more or less consequence, according to their size, depth, and the state of the constitution, or as they affect the mammary gland.

CAUSES. The inflammation which preceeds the milk-sore, may arise from too sudden a distension of the mammary vessels, an imperfect secretion, improper and topical applications, with design to prevent or repel the secretion, cold, an acrid state of the juices, plethora, or external injury; which latter may be the cause of inflammation, whether accompanied with, or independent of, the milk secretion.

CURE. If the inflammation which happens after lying-in, be attended to in proper time, it may be checked, by keeping the patient in a half-sitting posture in bed, gently relieving the bowels by glyster, or some other means, and giving her plenty of diluting liquors. If the breast feel very tense, it should be bathed now and then with a little pure oil of olive, or if on the second or third day after delivery, the milk secretion should be irregular, and the breast swell and indurate, the common poultice, with white bread and milk, should be applied night and morning at least. The nurses, to whose care the good women are too much trusted upon such occasions, eagerly and repeatedly put the child to the breast, apply glasses, or use some kind of means

means to draw the breasts, as they quaintly term it, to the no small pain and fatigue of the patient. But to those who can reason upon the subject, it is evident, that such treatment must do more harm than good; and that the tension is much more likely to be relieved by a few applications of the poultice, assisted with gentle diaphoretics und laxatives. Should the complaint resist these first attempts, maturation will probably ensue, and the emollient poultice is most likely to assist its progress.

As soon as it appears to be matured, an opening should be made sufficient to give vent to the contents; and whilst hardness remains, the poultice alone is the best remedy, afterwards lint spread with white cerate may be applied. When more than one fore forms in the breast, the treatment should be the same, taking care to make the opening for the discharge of their contents, at the place where nature points for it. Some quondam practitioners were very fond of poking out sinusses, and formidably slashing the breast in every direction; but experience tells us, that it is best to follow nature's dictates, particularly in abscesses of this kind; except where her process has been disturbed by probing, tents, escharotics, and such like rough means: and even then the more acceptable change of gentle and superficial treatment, will mostly answer best. When it is necessary to repel the milk, that is, when no ends can be procured without causing inflammation, it ought to be proceeded upon with due caution. Sometimes warm cloths will promote its discharge by the nipples, and carry it off; sometimes a flux of urine, profuse sweats, or a copious discharge from the bowels: but if none of these excretions should take place after it has returned into the habit, much mischief may follow, particularly in weak constitutions. In such cases, it will be proper to use gentle diaphoretics, aperients, &c. otherwise, slow remitting fevers, œdematous swellings in the
legs

legs and thighs, abscesses under the axilla, and such kind of accidents have happened in consequence of its remaining in the habit.

If the lochia or menstrual discharge should be suppressed, perhaps a slight bleeding will be necessary; compresses dipped in Mindererus's spirit, properly neutralized and gently warmed, which is a more safe and mild repellent than Goulard water, also plasters, and ardent spirit with camphor dissolved in it, may be proper.

Those indurations which are formed in the cellular and adipose membrane, are frequently resolved by a long continuance of the bread poultice, and now and then giving a calomel pill or two with a laxative draught. Those that are fixed in the glandular substance, have been known to yield to a poultice made with linseed meal, hemlock, and decoction of chamomile flowers, as mentioned under the article scirrhus, accompanied with an alterative course of calomel and cicuta, or now and then rubbing into the habit, a small portion of the strong mercurial ointment. If, after proper trial the foregoing means should not have the desired effect, excision is the only resource. It would be highly improper, upon any occasion, to administer the cicuta, or active medicines of any kind, before the child has been weaned.

The œdematous swelling in the leg and thigh, which sometimes has encreased to an enormous size, has at first been relieved by the saline draughts in effervescence, by promoting the urinary secretion, with the occasional assistance of a laxative draught with manna and soluble tartar. When obstinate, a pill with calomel and camphor for two or three nights successively, passed off with a mild aperient, a tightish bandage carried spirally from the toe upwards, country air, moderate exercise, and a dry diet have proved effectual.

The best application to the nipples, when excoriated, are, mucilaginous lotions, or mild cerates:

Scirrhus

Scirrhus and Cancer.—These complaints chiefly affect the breasts of women. The different stages, causes, and treatment, and the general mode of extirpating scirrhus tumours, or the occult kind of cancer, are noticed under those heads; it is intended therefore in this place, more particularly to point out the usual mode of operating when the skin is more or less diseased; and to describe the mode of excision practised by Mr. Fearon, surgeon of the Surry Dispensary; in whose Treatise on Cancers, satisfactory proofs have been given of its utility and success, in every case where the integuments could be sufficiently preserved for healing by primary and secondary union. Previous to which, it may not be improper to mention two objections to the operation, which the surgeon will find strongly impressed on the mind of the patient.

It is frequently urged by the afflicted, and their numerous visitants, that the milder complaint may remain in an indolent state for many years; and that in the confirmed state, there is no certainty of the operation proving effectual; both which arguments are delusive, and tend to prevent the operation being performed in due time. In answer to which, it should be zealously proved, that many knots in this part which had appeared to be of little importance, have rapidly degenerated into cancers, particularly about the end of menstruation; and that some most dreadful cancers, in which the diseased part adhered to the muscles and ribs, and even when the latter were carious, have been cured after extirpation, and remained free from relapse. Also, that it is an indisputable fact, that the earlier in the disease the operation is performed, the more likely it is to be attended with lasting success.

Nothing then absolutely prohibits the operation, but when the life is likely to be immediately endangered by it, or the glandular system and habit are two generally affected. In such cases, the means
pre-

prescribed under the article Cancer, should be referred to. It will be also right, in the large ulcerated cancer particularly, to use the alterative course, together with the bark, as soon after the operation as the suppurative process is confirmed.

Great improvements have been lately made in the general mode of extirpating scirrhus tumours from the breasts, by preserving the sound skin which covers the diseased part, in order to lessen the dimension of the sore, and heal it the sooner; but some practitioners still continue to stuff the wound with lint, and thereby impede the natural process by the first intention, wherever such means are practicable. Heretofore it was a maxim, when the tumour occupied a great part of the breast, to remove the whole, leaving a large open wound; but the remarkable success which has attended the new practice of excision, and healing by the first intention, clearly proves, that the limits of the operation ought to be as confined as possible, except when the teguments are too much diseased.

In scirrhus or cancerous complaints, where the teguments are diseased, or adhere so close as not to admit of being separated from the tumour, one incision is sometimes made the whole length, and the bad part is taken off from one or both sides, in as strait a direction as possible; at other times, the whole of the diseased integuments are included within a circular or two semilunar incisions.

The tumour which in these cases is formed in the armpit, when large and firmly attached to the subjacent or adjacent parts, it is dangerous to meddle with, but if in the least moveable, it may be safely dissected away, by drawing it forward with the hook, fingers, or a strong ligature passed through the middle of it. If a chain of indurated glands run up to the clavicle or armpit, they must be dissected away by an opening continued from the breast, but if not particularly connected with the sore at the breast,
dis-

different openings may be made. It ought to be observed also, that the operation can be of little or no use, unless the tumours under the armpit be totally removed.

Mr. Fearon's mode of excision, and his after-treatment, are conducted after the following manner:

The patient being seated conveniently, with the head supported on a pillow, by an assistant behind, and her arms held by one on each side, the surgeon makes a horizontal incision, in the direction of the ribs, a little below the nipple, the assistants then draw the teguments as far asunder as possible, and press their fingers on the bleeding arteries, whilst the surgeon is dissecting the diseased mass from the skin above, and the pectoral muscle or parts below: after which, the wound being carefully examined, every small indurated or thickened part is removed.

The hæmorrhage by this time generally ceases; but if an artery still bleed freely, it must be secured by means of the tenaculum and ligature, the ends of which are left a proper length out of the wound. The whole is then sponged clean, and the parts and edges of the wound are laid even and in perfect contact, and retained so by two, three, or more futures of the interrupted kind, according to the extent of the wound; and by the application of slips of adhesive plaster, in the intermediate spaces, across the line of incision.

About the third or fourth day, the serous discharge appears through the bandages, and the slips of plaster grow loose and require to be removed: the stitches in the teguments may then be divided with a pair of scissors. The incision is after this dressed daily with small slips of lint, spread thin with a mild cerate made with the purest oil and wax. The ligaments by which the arteries are secured, are gently rubbed every day after the first inflam-

mation is abated, and drawn away in due time for the secondary union, or what is termed adhesive inflammation, to take place. The cure is greatly accelerated, by repeatedly supporting the edges with a few slips of adhesive plaster.

When the skin is ulcerated or diseased, a second incision is made in as strait a line as the inclusion of the diseased part will admit, as far as the extremity of the first; and the edges, &c. are brought together in the same manner as before directed. The incision he orders to be made below the nipple, because the natural position of the part more readily inclines to union, and the breast is less subject to deformity.

This method deserves particular attention, as the cure is generally completed in a fortnight or three weeks; nay, sometimes in as many days as weeks, where the suppurative process has taken place.

The difficulties that the inventor has found in establishing this method, are not at all to be wondered at, since credit will attend every new mode of practice, according as it is countenanced by the leading men in the profession.

A large thick soft compress made of linen, that has been in use, is to be applied after each mode of dressing, and a linen, or rather flannel roller, about five inches broad, and six or eight yards long, bound gently tight over all. The arm, on the affected side, is to be supported in the flexed position, by a handkerchief tied round the neck.

Wens, glandular, frumous, or encysted tumours, may be operated upon, after one or other of the foregoing methods; and care should be taken to preserve a due quantity of sound skin and integuments, in order to promote union by the first intention, as much as possible.

The method of extirpating scirrhus or cancerous tumours by caustic, is infinitely more irritating, painful, and imperfect, than by the knife,

it has not therefore been attempted by the regular practitioner, except where the knife was inadmissible.

CÆSARIAN SECTION.

The most considerable impediment to natural child birth is, when the pelvis is so distorted, or contracted in its dimensions, as to prevent the child's head passing without being opened. In order therefore to preserve the life of the child, two formidable operations have been practised, the one denominated cæsarion section, the other, the section of the symphysis pubis.

The cæsarion section was originally performed after the mother's death; afterwards, when there was no other prospect of saving either mother or child.

The honour of ascertaining the extreme dimension of the pelvis, in which embryulcia, or the extraction of the foetus can be performed, of fixing due limits to the cæsarion operation, and checking the dangerous practice of dividing the symphysis pubis, which latter was humanely pointed out as a medium for the safety of both mother and child, is principally due to Dr. William Osborne, of London, who in his excellent Essay on Laborious Parturition, has regularly proved, that death is almost infallibly the mother's lot by the cæsarion operation, and that no circumstance can render the sectio symphysis warrantable.

Much has been written for and against the cæsarion operation, but the want of success with respect to the life of the mother, in every attempt lately made in these kingdoms, seems strangely to contradict the accounts which have been published in its favour. In instances where the diameter of the pelvis is less than one inch and a half, it is perhaps the only mode for delivery, since the gaining three or four lines

by means of the *sectio symphysis* will be manifestly useless. In every such case, therefore, it is surely more warrantable to give the mother the chance of this operation, although dangerous in the extreme, than suffer her to die undelivered.

The mode of operating is as follows: An incision six inches in length, beginning between two and three inches higher than the navel, is to be made in a longitudinal direction, about a hand's breadth from that part, and on the side of the abdomen to which the uterus inclines, through the adipose membrane; an opening is then to be carefully made through the tendinous expansion of the abdominal muscles and peritonæum, sufficient to admit the fore-finger of the left hand, upon which the curved knife is to be conducted upwards, along the course of the incision, when, unless the case be extra-uterine, the uterus being brought to view, an aperture is to be made with the same caution near the centre of the wound, into the uterus, and large enough for the introduction of the finger, upon which the point of the knife is to be conducted upwards and downwards, in equal extent with the outward incision. The placenta and membranes will most probably incline to protrude at the instant that the incision in the uterus is complete. The sides of this incision are to be kept as much asunder as possible, whilst the hand of the operator, or an assistant, is introduced for the foetus, which must be extracted by the feet.

This being done, an assistant should be ready to tie and divide the umbilical cord, and the placenta is to be removed as soon as possible, since the uterus quickly contracts, but more especially as soon as freed from its contents; which circumstance occasions the omentum and intestines to press forward in such a manner as to require an assistant to keep them back, whilst the operator is cleansing the wound, and sewing it up. This ought to be
done

done with the quilled suture, and double ligature, at proper intervals, each stitch being made an inch at least, or an inch and half from the edge of the lips of the wound, which should be dressed with lint and a common pledget.

Heister advises the incision to be made between the navel and ilium, through the point where the paracentesis is commonly made; but in an account of this operation, as performed in the year 1769, by that ingenious and skilful operator Mr. Henry Thompson, then one of the Surgeons of the London Hospital, it is proved, that the course of the linea semilunaris, is by far the most eligible part to operate in, both to lessen the chance of hæmorrhage, and avoid the protrusion of the intestines and omentum; the whole loss of blood during that operation, which is the standard of the foregoing directions, having not exceeded four ounces.—Vide Med. Obs. and Enq. vol. i.

It is recommended by Heister to sew up the wound in the abdomen, so as to leave an opening at the bottom for the insertion of a canula, tent, &c. which precaution is certainly of no kind of use, since it cannot, with either convenience or safety, be made a depending orifice, or be in the least connected with the internal wound.

DIVISION OF THE SYMPHYSIS PUBIS.

From the favourable opinions which many principal men in the profession abroad have publickly avowed concerning this operation, the extravagant encomiums of some eminent practitioners in midwifery who have performed it, and the singular honours and rewards conferred on Mr. Sigault for first attempting it, one would hardly suppose that the utility of it could be at all disputed. On the other hand, when we duly consider that to gain four

lines, or one third of an inch at most, the ossa pubis must be separated two inches and a half; and when, as Dr. Osborne has very justly observed, "we reflect upon the mischief that the soft parts must suffer from such a separation, particularly those which lie immediately behind, and in contact with the ossa pubis, by being torn from the bones to which they are naturally connected, exposed for a considerable time to the external air, and by being pressed against the divided edges of the bones of the pelvis, in the passage of the child's head;" it seems to be rather more extraordinary, that men of experience and knowledge should have given it the least degree of countenance.

Whoever attentively follows the Doctor through this sensible performance, will find that he has regularly and clearly demonstrated the following facts:

That a child at full maturity cannot be born alive through the natural passage, where the dimension of the pelvis is not two inches and three quarters from pubis to sacrum.

That when a pelvis measures from two inches, to two inches and three quarters, the head being opened in the beginning of the labour, may collapse and be forced down by the powers of nature, without the use of the crotchet; or that it may at least be more easily and safely effected therewith.

That the head of a child at full maturity cannot be engaged in a pelvis which measures only from one inch and a half, to little more than two inches, without the help of the crotchet.

That a child, at full maturity has been extracted by the Doctor, with safety to the mother, by means of the crotchet, where it measured not more than one inch and a half from pubis to sacrum; which is much less than is thought to require the cesarean operation.

That considering the life of the child in its true

and natural light, it ought not to be put in competition with the safety of the mother. And,

That, as has been before remarked, the ossa pubis must be separated two inches and a half, to gain four lines, or one third of an inch at most.

From these facts, together with the history and event of seventeen cases out of twenty-five, wherein the sectio-symphysis had been performed previous to the publication of the essay, particularly the detail of the first case, which may be called a hair-breadth escape, he has confuted every argument in its favour, by proving from the accounts of those who are partial to this operation, that every one of these cases was attended with fever, inflammation, gangrene, fistula of the bladder, exfoliation in the ossa pubis, and other grievous symptoms; and that in most instances, it has not answered one part of its original intent; namely, that of preserving the child; also, that in several it has terminated fatally to both the mother and child.

Mr. Bell, in the sixth volume of his excellent book of surgery, has singularly noticed the division of the symphysis pubis. He advises that operation, in preference to the delivery with the crotchet: and from what he has there advanced, it may reasonably be supposed, that his opinions on this subject have not been formed from practice; particularly when he declares, "That the division of the symphysis pubis is not *in any respect* hazardous."

The following is a brief description of the operation, as it was first performed by Messrs. Sigault and Le Roy, together with its event;

It was performed with a common bistoury, by cutting through the integuments and linea alba, beginning the operation at the upper and central part of the symphysis pubis; then introducing the forefinger as a director, and dividing the ligaments and cartilage; immediately upon which, the ossa pubis separated about two inches and a half. The feet of

the child are said to have been brought down by Mr. Sigault, and the delivery to have been quickly accomplished by his able advocate, M. Le Roy. The child was born alive, and no hæmorrhage is said to have ensued. A bandage was afterwards applied round the body of the mother, in order to keep the pelvis firm. All went on pretty well till about the sixth day, when the patient was seized with rigor, and every inflammatory symptom; gangrene and slough ensued, in the urinary passage at least, which was wounded in the operation, and most probably in the bladder itself. She had two relapses, in both which her life was despaired of; and she could not be pronounced out of danger from the operation, till about the thirtieth day, after which she gradually recovered. *No inconvenience* is said to have remained, except that whilst standing or walking, her urine would pass away involuntarily. It ought to be further remarked, that the child was very small, and that its birth was supposed to be premature.

OBSTRUCTIONS, COHESIONS, AND STRICTURES IN THE GENITALS.

Obstructions and cohesions sometimes happen in girls, at the entrance of the urethra and vagina.

The first is discovered soon after birth, from there being no passage for the urine; in which case, if not soon relieved, the infant must perish. Sometimes the passage is small, and contracted in such a manner, that the urine can only be discharged by drops. The orifice of the vagina is also at times shut up by the hymen, or a thick fleshy membrane; which circumstance is seldom discovered till the age of puberty, when the menstrual discharge is prevented from making its exit; producing fulness and tumour at the part, with the general symptoms of suppression. Cohesion, and stricture, are also known to

to occur on the sides of the vagina. The former instances are mostly natural defects and imperfections; the latter may proceed from thickness of the coats, ulceration, and cicatrix.

In all such cases, relief is principally to be obtained from the knife and director, or finger in its stead, as described under the article Imperforated Anus; taking care to avoid injuring the bladder and rectum. When the hymen is extended over the urethra, a longitudinal incision may suffice.

When either passage is very small and contracted, it may be relieved in great measure by dilatation, or gradual distension, with a bougie of a proper size, or after the manner described by Mr. Bromfield; which is, by introducing the closed end of the appendicle of the blind gut of an animal, or fowl, in a collapsed state, up the passage, to the extent of the constriction, and filling it with tepid water by means of a syringe; then securing the open end, which must be left out a proper length, by ligature. This contrivance has answered well in several cases where dilatation or compression was required; particularly in compressing the mouths of the vessels in the bleeding piles, when seated out of the reach of the needle. Scarifications, or small incisions, are recommended on the sides of the vagina, when strictured from cicatrix, &c.

Warts, Tubercles, Caruncles, Excrescences, and enlarged Nymphæ. Excrescences of various sizes and shape, resembling warts, grapes, mulberries, mushrooms, &c. infest the private parts of women, both internally and externally, are exceedingly troublesome, and have sometimes degenerated into cancers. Proper distinction should be made between some particularly shaped excrescences, and the prolapsus uteri, or vaginæ.

When tumours of this kind greatly obstruct the passage, it may be necessary to remove them by ligature, scissors, knife, or catheterics, as in those

about the anus. The nymphæ are sometimes greatly enlarged and indurated, requiring to be partly, or wholly, extirpated with the knife. When such complaints arise from a vitiated habit, a proper course of medicines will be necessary.

PROLAPSED AND INVERTED UTERUS.

Prolapsus Uteri. This complaint is distinguished into two kinds; the incomplete, which is so termed whilst the uterus remains in the vagina, formerly called descensus; and the complete, to which alone was given the appellation of prolapsus, when it reaches beyond the pudendum.

When the prolapsed part gets low down in the vagina, the sense of weight, irritation, and painful distension, are exceedingly fatiguing; and as it proceeds towards the os externum, the pressure against the urethra and rectum, frequently creates great difficulty and pain in passing both urine and stool: much more trouble arises, when the prolapsed part protrudes beyond the external orifice, particularly excoriation and painful irritation from friction in walking.

When the disorder proceeds from relaxation, or violence, and makes a gradual progress, it is not so likely to inflame; but when it follows immediately after a laborious birth, the parts should be quickly returned, otherwise the sudden dislodgement and exposure to the air, are very likely to produce inflammation and gangrene.

The prolapsus uteri may, by a careful examination, be perfectly distinguished, either from its inversion, the prolapsus vaginæ, or excrescences of that part. The former is of a firmer texture, and wears a smoother surface than either of the latter complaints; besides, the os internum is commonly to be seen or felt in the first, and not in either of the other tumours.

CAUSES.

CAUSES. The prolapsus is generally supposed to arise from a relaxation of the ligamenta lata and rotunda, but chiefly from weakness in the vagina; all which may be occasioned from a debility in the habit, laborious births, or frequent miscarriages.

CURE. When it follows a difficult labour, or rough treatment, it ought to be reduced as early as possible, for fear of alarming consequences. After reduction, the patient must be kept for some time in a supine posture, with her hips elevated, and her thighs close to one another; by which means only, in a recent case, the parts have been known to recover their tone. Should inflammation follow, proceed as in other cases, consistent with the nature of the habit and particular state after labour. The thebaic tincture, with antimonial or ipecacuanha wine, internally, and properly repeated, together with diluent liquors, are most likely to be serviceable under such symptoms.

If the complaint be of long standing, and its descent low down, the reduction will be proper, and it may be frequently retained by means of a counter-distension in the vagina with a pessary, which instrument is made of box, lignum vitæ, or ivory; the bark, chalybeates, and such like tonic remedies, together with the cold bath, are also necessary. Fumes, fomentations, and injections, are not likely to have good effect, unless the weakness proceeds from, or is increased by a copious discharge of mucus, or fluor albus; then dry fumes from the gums benjamin, mastich, olibanum, &c. and astringent injections, may prove serviceable. The distension of the uterus during pregnancy, often supports the part.

The mode of reducing a prolapsus is easily to be understood from what has been observed respecting the prolapsus ani. The patient must be laid on her back,

back, with her hips elevated, and the part is to be artfully passed up as high as possible, by means of pressure with the fingers of each hand, near to the verge of the vagina; then retained so by the foregoing posture in case of tendency to inflammation; or, if free from such dangerous symptoms, by means of pessary, compress, and bandage: Pessaries are made of different shapes as well as sizes. The globe pessary is much recommended by Dr. Denman, in the London Medical Journal for 1786, part 1. but it has not sat easy with some persons.

Inverted Uterus. This disaster seldom happens but from the rashness or mismanagement of the midwife. Too great force applied to the navel strings, together with the expulsive throes of the woman, before the uterus has had time to contract, is very likely to draw down the fundus without the os externum. In such a case it will be extremely dangerous to wait for separating the placenta, both for fear of considerable hæmorrhage and contraction of the vagina and uterus; instead thereof, try immediately, yet carefully, to revert the fundus; which, if not practicable by other means, press the fingers of both hands on the inward part, and gradually squeeze it up as in the prolapsus ani, and follow it up with the whole hand, whilst the os uteri, and vagina, remain in a relaxed and dilated state. The patient should be placed, and continued in the posture heretofore described, with her thighs put close together. Cases are known where the inverted uterus has remained low in the vagina, even protruded beyond the labia pudendi, and has been nearly contracted to its natural size, many years after such accidents; but a constant drain, and other dreadful symptoms, have sooner or later proved fatal.

RETROVERTED UTERUS.

This disease has been but lately understood. It is a reflection, or doubling down as it were, of the fundus uteri, between the body of the uterus and the rectum, in the early months of pregnancy. Its general indications are, a sudden and continued pain in the lower part of the abdomen; pain, and a sense of weight in the back, loins, pelvis, and thighs; together with a partial or total stoppage of urine, and difficulty of going to stool. When this complaint attacks the patient about the time that the fundus uteri should rise above the brim of the pelvis, or is inattentively suffered to continue impeded, it becomes locked up in the pelvis, and is thus circumstanced.

Great difficulty occurs in passing both stool and urine, which evacuations, by degrees, become totally suppressed. A large tumour is formed in the lower part of the abdomen, by the distended bladder; the finger cannot be passed either up the vagina or rectum, on account of the reflected uterus pressing the former against the os pubis, and the latter against the inside of the os coccygis; the neck of the bladder, or some part of the urethra, also is compressed, so as scarcely to admit the catheter to pass; and the distended bladder posteriorly presses the uterus backwards and downwards; and as it rises up into the abdomen, naturally drags with it the collum uteri, and meatus urinarius.

The pain, weight, and bearing down, are constant attendants on the complaint; and the subsequent symptoms, such as dry tongue, languor, rigor, fever, inflammation, tension, and gangrene, are produced by the continued obstruction and distension of the bladder, and intestinal canal; and the bladder is in danger of bursting if the urine cannot be drawn off.

CAUSES.

CAUSES. A pelvis formed most capacious at its inferior part, together with an over-distended bladder; in the early stage of gestation, about the time that the uterus reaches the brim of the pelvis.

CURE. If this disorder happen early, and be properly attended to, it generally gives way to the frequent use of the catheter, (the flexible male catheter is preferred) or glysters, and gentle laxatives; otherwise, attempts should be made to reduce it after the following manner: Place the patient on her side, then introduce two fingers of one hand into the vagina, and one or two of the other into the rectum; and whilst she turns herself gradually on her knees and elbows, press the uterus forward and upward. When the attempt succeeds, a relapse is to be apprehended; therefore the patient should be kept in a recumbent posture for some days, or till the fundus uteri has passed the brim of the pelvis; and both the bladder and intestine should be frequently emptied.

It is to Dr. Denman's indefatigable endeavours we are indebted for the great and useful discovery of this complaint; which, although generally considered as highly formidable heretofore, is proved to be a case of little difficulty or danger if timely attended to.

Dr. Hunter has *suggested*, perforation of the uterus per vaginam, when the parts are found to be so wedged in as to render the reduction impracticable in the distended state; from which operation, the liquor amnii being discharged, the size of the uterus may be so diminished as to admit of its reposition. See further remarks on this dangerous expedient, Lond. Med. Obs. vol. iv. v.

Prolapsus Vaginæ. A part, or the whole of the vagina, will sometimes protrude beyond the os externum, like a fleshy ring, red and bloody, and more or less swelled. This complaint is generally occasioned by weakness or over-distension; be it from

from either cause, it requires much the same treatment as the prolapsus uteri.

Some attention is necessary to distinguish the partial prolapsed vagina from the polypous or fleshy excrescence which sometimes grows out of that part. The remains of rugæ appear mostly in the former; its basis is most commonly broad, and the tumour does not feel pendulous. Strict enquiry into the rise and progress of each, as well as the continuation of the part, will enable the skilful surgeon clearly to distinguish every tumour in these parts.

Laceration of the Perinæum. This complaint is to be prevented, by placing the hand firm against the part, as soon as what is called the tumour begins to form, and forcibly resisting the latter part of the labour. If the perinæum only be torn, it may not be attended with very great inconvenience; but when the laceration extends into the rectum, it becomes bad indeed.

Dr. Denman is of opinion, that, sometimes at least, it ruptures from the posterior part; as he recollects observing a laceration in perinæo, between the rectum and frænulum vaginæ.

The interrupted suture is said to have been tried in vain in all such cases; the chief remedy consisted in therefore at present is, keeping the parts as apposite as possible, by lying in bed with the legs closed. Perhaps sometimes, just paring or snipping the edges, and retaining them together whilst in the bleeding state, by means of the twisted suture, as has been successfully practised with the jagged callous edges of the perinæum and urethra of men, might prove efficacious. Vide Warner's Cases.

Cancerated Uterus. Women who have been subject to profuse menstruation, are very likely to be afflicted with this terrible disorder; which commonly makes its appearance about the time when that discharge ceases. It may originate from difficult labour, neglected prolapsus, as well as the general

neral causes already mentioned under the article Cancer.

The symptoms are, stretching lancinating pains in the groins, belly, and about the pelvis; induration and ulceration at or near the collum uteri; a foetid, sanious, and sometimes bloody discharge; and, in process of time, tumefaction, and œdema in the labia pudendi, which generally extend themselves to the groins, and down the thighs.

The powdered leaf of hemlock, with calomel, and bark, are said to have cured an evident scirrhus in this part; but in this, as well as all complaints of this kind, no good is to be expected from the use of medicine, without due perseverance.

DISORDERS OF INFANTS.

Many irregularities and imperfections of the different parts of children, previous to their birth, which require the aid of the surgeon, are already noticed under the several articles respecting the penis and urethra, anus, hare-lip, cœdema and obstructions, &c. It remains therefore principally to advert to the following complaints:

Distorted Knees, Legs and Feet. Children are sometimes born with knees or feet turned on one side; the bones of their legs are also sometimes weak and crooked; which complaints are frequently confirmed, from being too long neglected, or being set upon their feet before their legs are strong enough to bear the weight of the body.

The distorted parts are not unlikely to be restored to a tolerable state, by gradually attempting to lead them towards a direct position with the help of pasteboard splints dipped in oxycrate, applied over a thin compress, and proper bandage.

The club-foot, in its early stage, is said to have been cured by reversing the position as much as possible, and repeatedly applying slips of linen cloth,
dipped

dipped in an epithem made with whites of eggs and flour, and keeping the limb in that posture until the cloths are grown dry and stiff.

In some instances, machines have been so contrived at a proper age, as not only to assist the weakness, but also to relieve the distortion of the limb.

When the legs of a child are weak or distorted, it will be proper to enjoin rest, till the part is relieved as far as may be, or the constitution is generally amended by the use of the cold bath, tincture of bark and flowers of steel, and now and then interposing a gentle puke and dose of rhubarb.

Tumours on the Head. The tumours here meant, are such as form upon the head, chiefly over the fore-part, and on the sides, and are supposed to arise from some injury received during a laborious birth. A tumour of this kind is without inflammation, soft, and containing a fluid of a purplish red colour; it also feels bounded by a ridge, as if there was a depression or deficiency in that part of the cranium; particularly when the fluid, which is generally extravasated blood, is lodged between the skull and pericranium.

Many practitioners have a terrific idea of these tumours; and supposing them to have an important connection, do not care to meddle with them; but the fluid contained in them lies commonly between the teguments and pericranium, now and then between that membrane and the cranium; in which case, the external surface of the bone is sometimes injured. Some surgeons endeavour to disperse them, by applying repeatedly compresses wetted with brandy or red wine, and vinegar, in order to excite absorption; whilst others condemn such practice, lest the contained fluid should not be in a state fit to be absorbed, and use the knife indiscriminately; making an incision nearly the length of the tumour, pressing out the contents, and dressing superficially.

Spina Bifida. This disease is a soft swelling which sometimes makes its appearance in different parts of

the spine of a new-born infant. It is formed within the covering of the spinal marrow, contains a serous fluid, and lies in an opening between the neighbouring vertebræ and their processes. This complaint is local, and there is sometimes a deficiency of bone in the part; it generally proves fatal in a few months. A soft hollow pad has been sometimes applied as a support to the part; but should no effectual remedy be discovered, death must be the inevitable consequence of a spontaneous breach.

Mr. Abernethy, in his Essay on Lumbar Abscesses, gives it as *his opinion*, that this complaint is curable; he recommends gentle pressure from birth, to prevent accumulation, and procure absorption. Should that not have the desired effect, and the accumulation of the fluid continue, he thinks it advisable to discharge the fluid, by puncture, with a fine cutting instrument, and endeavour to heal by the first intention.

Swellings of this mortal kind have also been met with on different parts of the head.

Nævi Materni. These marks are often found, at birth, on different parts of the body, are of various forms, resembling cherries, grapes, strawberries, &c. and mostly of a deep red or claret colour. They are commonly flat and broad, sometimes protuberant, and now and then pendulous. These tumours are of the sarcomatous kind, are abundantly supplied with blood vessels, and when increasing, should be removed by the knife or ligature, and be treated accordingly. Their cause is truly mysterious.

EXTERNAL MEDICINES,

GENERALLY RECOMMENDED.

Goulard's Extract of Lead.

Take a pound of litharge of gold, two pints of the best white-wine vinegar; boil or rather simmer them together in a glazed earthen pipkin for an hour, now and then stirring up the whole with a wooden spatula; set the whole by to settle, and pour off the top into bottles for use. The Lond. Pharm. orders litharge 2 lb. and 4 oz. distilled vinegar one gallon, to be boiled to six pints, set by and strained; which is equally efficacious with the former.

Goulard's Vegeto-Mineral Water.

Put two tea-spoonfuls, or one hundred drops, of extract, with two tea-spoonfuls of brandy, to a quart of water. The quantity of extract and brandy may be increased or diminished according to the state of the complaint, or the greater or less sensibility of the part.

This remedy is applicable to inflammations that principally arise from accident, and should be used cold in summer, and slightly warmed in winter.

Bell's Saturnine Water.

Dissolve half an ounce of sugar of lead (*cerussa acetata*) in four ounces of vinegar, and two pints of spring water.

This preparation is of the same nature with Goulard's vegeto-mineral water, or aq. litharg. acet. comp. Ph. Lond.

Mindererus's Spirit.

Take a dram of volatile salt (*ammonia ppt.*) and pour gradually upon it about four ounces of distilled vinegar, occasionally stirring the mixture.

This is now called *aq. ammon. acetat.* It is an useful discutient externally, and is often employed internally as a diaphoretic.

Solution of Crude Sal. Ammoniac.

Dissolve half an ounce of crude sal ammoniac in a pint of French or distilled vinegar.

This is also a powerful discutient, particularly in deep-seated tumours of the inflammatory kind. The foregoing solutions may be applied by means of linen rags frequently moistened with one or other of them, or mixed with crumb of bread in form of a poultice.

Common Emollient Poultice.

Take of milk half a pint; crumbs of white bread a sufficient quantity to give it a proper consistence. Stir up the bread with the milk when heated, and add two or three spoonfuls of the purest oil, or a proportionate quantity of fresh butter; then braid the whole with a spoon into a smooth mass. This is the common suppurative poultice, and is to be applied every three, four, or six hours, spread thick on doubled rag.

Or, a poultice of the same kind may be made, by merely soaking slices of new bread in boiling hot water till quite soft, then pressing out the superfluous water, and beating up the bread with a spoon, adding a small quantity of linseed meal instead of oil.

Fermenting Poultice.

This is made with wheat flour, honey, water, and yeast, in sufficient quantity to raise fermentation. It is

is made into a thin paste, and set by the fire to ferment, then applied once or twice a day.

Or, as much oatmeal flour as is necessary may be mixed up with infusion of malt into a poultice, adding a spoonful or more of yeast.

This kind of poultice is recommended to mortified parts. The peruvian bark and tincture of opium have been sometimes added.

Warm Discutient Poultice.

Take of the crumb of white bread, or the flour of oatmeal and the lees of strong beer, each a sufficient quantity to form a poultice.

This is used to cold tumours, flabby sores, and gangrene, serving to assist the powers of circulation.

Resolvent Poultice.

Take of the crumb of white bread, oatmeal flour, or linseed meal, three parts; the leaves fresh or powdered, or the root of hemlock scraped, one part; infusion or a slight decoction of camomile flowers, enough to form a poultice. For its use, vide Scirrhus.

Adhesive or Sticking Plaster.

Take of litharge plaster half a pound, burgundy pitch three ounces, or of yellow resin one ounce and half. Melt them slowly together. Used for retaining dressings, and also the edges of wounds together. Vide Sutures.

Anodyne Embrocation.

Take of opodeldock, or spirit of wine and camphor, an ounce and half; tinct. of opium three drams. Mix. The tincture here prescribed, is what was formerly called thebaic tincture, or laudanum, Vide Int. Rem.

Litharge Plaster with the Gums.

Take of litharge plaster three pounds, strained galbanum eight ounces, turpentine ten drams, frankincense three ounces. Melt the galbanum and the turpentine together over a slow fire; then add the frankincense in powder; let the common plaster be afterwards melted over a very moderate fire, and be intimately mixed with the gums.

This plaster is frequently applied to indolent tumours, disposing them either to maturation or dispersion, according to the state which the part is most inclined to,

Detergent Lotion.

Dissolve one dram of gum myrrh in eight or ten ounces of barley water; then add two ounces of honey of roses; a sufficient quantity of spirit of salt to render it tolerably acid, may be occasionally added, for washing the mouth and fauces with.

Goulard's Cerate.

Take four ounces of refined wax, and a pound of pure olive oil; melt them gently together, and pour them into an earthen dish fit for the purpose: as soon as this mixture begins to cool, incorporate the following quantity of vegeto-mineral water, by little and little, with the wax and oil, by means of a wooden spatula, so that each quantity of the water be perfectly taken up before more is added. Four ounces of the extract is to compose six pounds of the water. The above quantity of oil and wax has been made to absorb eight or nine pounds of the water.

It has the property of healing ulcers, wounds, excoriations, burns, scalds, chilblains, &c.

A very few drops of the extract, added to two or three spoonfuls of cream, make a neat and efficacious liniment or cerate for kibes, &c.

White

White Ointment.

Take of olive oil four ounces, Spermaceti six drams, white wax one ounce.

Melt over a gentle fire, and keep briskly stirring till cold.

Liniment.

Take of olive oil three ounces, spermaceti six drams, white wax two drams.

Melt over a gentle fire, and keep briskly stirring till cold.

Cerate.

Take of olive oil four ounces, spermaceti half an ounce, white wax four ounces.

Melt over a gentle fire, and keep briskly stirring till cold.

Yellow Cerate.

Take of the purest yellow wax and olive oil, of each equal parts; melt them together, then pour the mixture into a gallipot, and keep stirring it till it grows cold: rather more oil will be necessary in winter.

These cerates are of general use, spread upon tow, or doubled rag; and are preferable to most other external applications, for ulcers, abscesses, wounds, &c.

The Strong Mercurial Ointment.

Take of pure quicksilver and pork-lard, each equal parts, rub the quicksilver first with a very small portion of goose-grease, then rub the whole

well together, till the quicksilver is perfectly mixed and extinguished. Vide Venereal Ulcer, Lues, &c. for its uses.

Camphorated Spirit of Wine.

Take of camphor two drams; rectified spirit of wine, four ounces; put them into a phial, cork it close, and set it by for solution.

Camphorated Oil.

Dissolve half an ounce of camphor in two ounces of the purest olive oil. This and the camphorated spirit, with or without opium dissolved, or the thebaic tincture, are useful embrocations against spasmodic pains.

Camphorated Vitriolic Water.

Take of white vitriol half an ounce, camphor two drams, boiling water two pints, mix them, and after the fæces are subsided, filter the liquor through paper. Many an obstinate ulcer has yielded to the application of this water properly diluted, and strict spiral bandage. Vide, Ulcers in General. This preparation diluted is also a very useful ophthalmic.

Lotions for the Eyes.

Ten grains of white vitriol in two ounces of rose water, or, one dram of compound powder of cerufs to six ounces of rose water; or Goulard's vegeto-mineral water; or, common almond emulsion and camphorated mixture of each equal parts——

The first is adapted to strengthening the parts after inflammation, the second and third to abate that symptom, and the last is useful as a detergent.

Traumatic, or Vulnerary Balsam.

Take of benzoin one ounce and an half, storax one ounce, balsam of tolu half an ounce, socotrine aloes two drams, rectified spirit of wine one pint: digest in a bath heat, and let them stand together for some time, frequently shaking the bottle; and when the gums are dissolved as much as possible, strain off the balsam for use.

This is an elegant improvement of Turlington's Balsam, and its external uses are particularly described under the articles—Wounds and Complicated Fractures. In the Pharm. Lond. it is named Tinct. Benz. Comp.

INTERNAL REMEDIES,

GENERALLY RECOMMENDED.

Saline or Fever Mixture.

To two drams of salt of tartar, (kali præparatum) add three ounces of lemon juice, and as soon as the effervescence ceases ten ounces of boiled or distilled water, two or three table spoonfuls of best brandy or spirituous cinnamon water, and half an ounce of sugar. A small tea-cup full of this mixture may be taken once in three or four hours. It is sometimes more efficacious with the addition of a grain or two of emetic tartar (tartar. antimon.) to the whole quantity.

Nitrous

Nitrous Julep or Decoction.

Boil two drams of pure nitre powdered, in twelve ounces of water, a few minutes, then pour off the liquor, and add to it two ounces of syrup of lemons, or one ounce of refined sugar: from two to four table spoonfuls of this may be taken alone, or with a cup of thin barley water, every two, three, or four hours,

Or, from five to ten or more grains of nitre rubbed into powder, with equal quantities of gum arabic and sugar, may be taken now and then in a cup of barley water, to which is sometimes added, two or three grains of camphor powdered, or about an eighth of a grain of emetic tartar, according to the state of the fever, or the patient's stomach.

Camphor Julep or Mixture.

Take of camphor one dram, refined sugar half an ounce, boiling water one pint; rub the camphor with a few drops of spirit into powder, afterwards with the sugar, then add the water by degrees, set the mixture by to cool in a close vessel, and pass it through a strainer. The dose is from two spoonfuls to a small tea-cupful occasionally, to ease spasmodic pains in the stomach.

This julep may be used with the nitrous julep, in the proportion of one third, should the stomach nauseate the latter.

Camphor Emulsion.

Take of camphor one scruple, sugar and gum arabic, of each two drams, or sweet almonds blanch'd four in number, rub them well together, and gradually add of distilled water six ounces.

This preparation is more efficacious than the mixture.

mixture. The dose one or two table spoonfuls now and then.

Almond or Common Emulsion.

Take of sweet almonds blanched one ounce, gum arabic half an ounce or more, double refined sugar six drams, barley water two pints; the almonds and sugar are to be beaten together in a marble mortar; the barley water with the gum dissolved in it, is to be poured upon them by little at a time, and the liquor is to be squeezed through a strainer. Its use is to dilute and obtund bilious and acrimonious humours, taking a cupful now and then. It is a pleasant vehicle for the nitrous powder, and may be made a gentle laxative, by adding an ounce of manna, and three drams of soluble tartar (kali tartarifatum) to about a pint.

Cooling Purge.

Dissolve half an ounce of Glauber's Rochelle salts, (natron vitriolatum aut tartarifatum) and the same quantity of manna, in three ounces of boiling water; strain off the liquor, and add to it one dram of tinct. cardamom. for a dose.

The same quantity of salts may be dissolved in half a pint or more of water, and divided into two or three doses, to be taken an hour or two distant from each other, if necessary.

Laxative Mixture.

Infusion of fenna three ounces, Epsom salts, or, crystals of tartar three drams, tincture of fenna half an ounce, mix. Two large spoonfuls to be taken every three or four hours, till it operates; which it generally does with less griping than most of the opening kind.

Common Glyster.

It may be prepared with ten ounces of gruel, decoction of bran, or camomile flowers, adding three or four spoonfuls of sweet oil, and one of coarse sugar or honey: if intended to purge, dissolve in it half an ounce or more of lenitive electuary, or the same quantity of purging or common salt.

Dover's Powder.

Take of opium and ipecacuanha root powdered, each two grains; nitre and tartar of vitriol each eight grains: one dose for an adult.

Antimonial Wine.

Take of vitrified antimony rubbed into powder one ounce, mountain wine a pint and a half. Digest for twelve days without heat, now and then shaking it up, and filter through paper. Given from ten to sixty drops, it acts as a diaphoretic and alterative. Vide Fractures, &c.

Ipecacuanha Wine.

Take of ipecacuanha root grossly powdered one ounce, dried orange peel two drams, mountain wine a pint. Macerate for eight days then filtre.

It operates as a safe vomit from half an ounce to an ounce, and is frequently given from twenty to thirty drops or more, with or without the thebaic tincture, as a diaphoretic.

Thebaic Tincture or Liquid Laudanum.

Take of strained opium sliced two ounces, cinnamon and cloves each a dram, mountain wine one pint.

pint. Macerate without heat for a week, and then filter the liquor through paper. The dose may be from ten to thirty drops: joined with antimonial or ipecacuanha wine, it acts as an excellent sudorific. The chief use of the spices is to render the opiate more agreeable to the stomach.

Opiate Pill.

Take of crude opium, and hard soap each one grain, and form into a pill for a common dose, to be repeated in an increased or diminished state, according to the exigency of the case.

Mucilage of Gum Arabic.

Take of gum arabic powdered two ounces, warm water four ounces; rub them well together, and press through linen cloth.

Alterative Pill.

Take of calomel from one to two grains, camphor two or three grains, conserve of hips a sufficient quantity. For other mercurial preparations, vide *Scirrhus*, *Scrofula*, *Lues*, &c.

Decoction of the Bark.

Take of the Peruvian bark (cinchona) from one to two ounces, spring water a pint and a half; boil to a pint in a close vessel. From two to three large spoonfuls may be taken two or three times a day, with or without a few drops of elixir of vitriol, as a restorative; or every two, three or four hours, according to the necessity of the case.

Sarsaparilla Decoction.

Take of sarsaparilla root sliced and bruised four
ounces;

ounces; boil in a gallon of water to half the quantity, then strain off the liquor.

Compound Decoction of Sarsaparilla.

Take of the sarsaparilla root cut and bruised six ounces, bark of sassafras root, guaiacum shavings, and liquorice root, of each an ounce, bark of mezereon root three drams, water ten pints; macerate with a gentle heat for six hours; then boil down to five pints, near the end adding the mezereon. Strain for use.

Decoction of the Woods.

Take of guaiacum shavings three ounces, raisins of the sun stoned two ounces, sassafras shavings and sliced liquorice root each an ounce, water one gallon; boil down the water with the guaiacum and raisins, over a moderate fire, to four pints, and add, towards the end, the sassafras and liquorice; then strain off the liquor.

Decoction of Mezereon Root.

Take of the bark of mezereon root from a dram and a half to two drams, liquorice roots sliced two drams, water three pints; boil down the liquor to a quart and strain.

Each of these decoctions may be taken by itself, or with a mercurial or antimonial alterative, from one to two pints three times a day. The simple sarsaparilla decoction agrees best with hot bilious constitutions; the compound, and decoction of the woods, with cold phlegmatic constitutions; and mezereon decoction is known to be highly efficacious in the cure of venereal phagædenic ulcers, and to have answered better than the former after a mercurial course. Vide *Bubo*.

Decoction of Serpentry.

Boil half an ounce of snake-root bruised in a pint of water to twelve ounces, then strain off the liquor without pressure. This has been of great use in languid habits, when joined with the bark decoction, in the proportion of one to three parts of the latter.

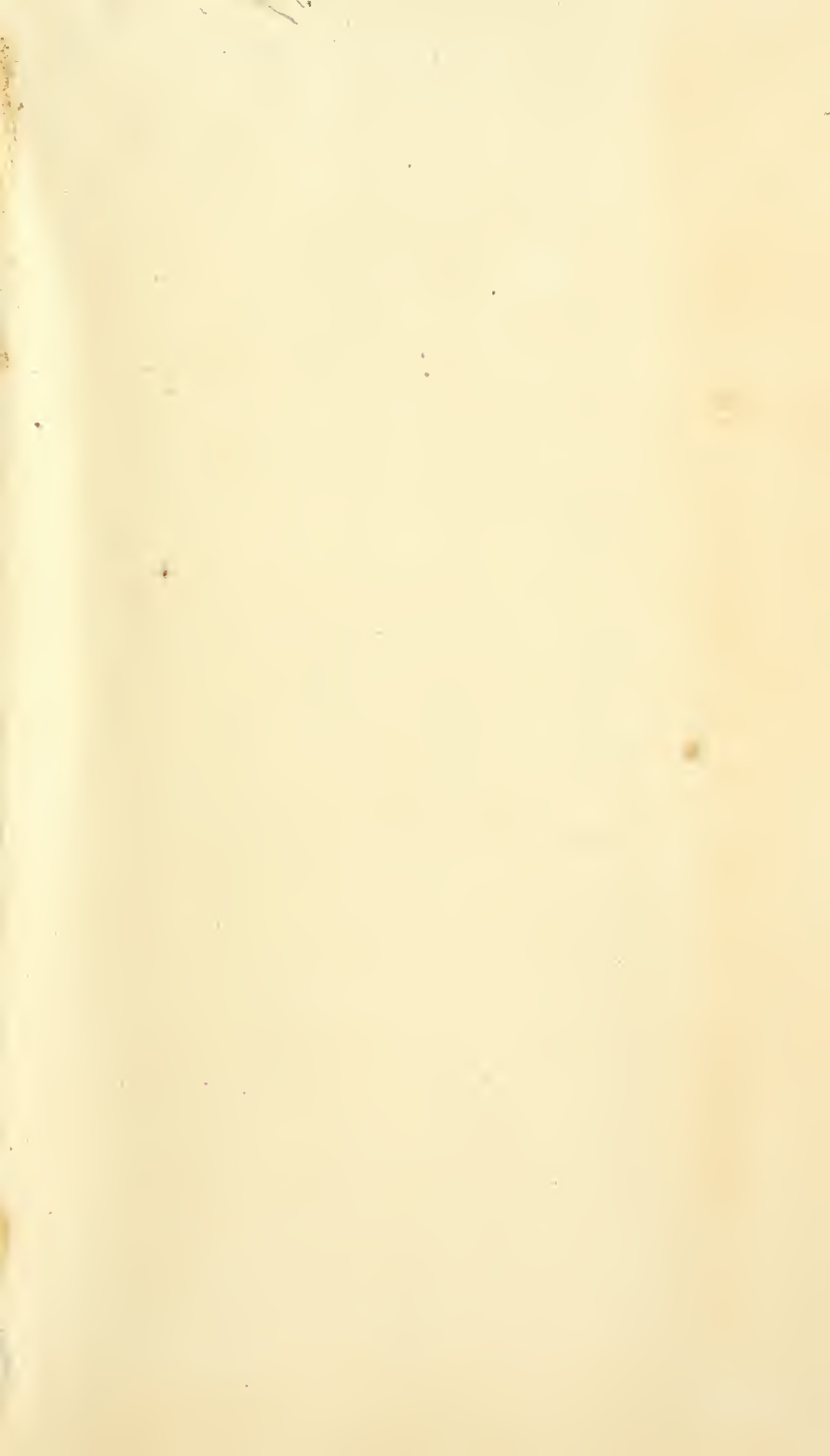
Diluting Drinks.

These may be made with pearl or common barley properly washed, rice, whole oatmeal, and bran boiled in water; infusion of balm or sage slightly acidulated with lemon or orange juice; and sweetened or not with sugar or honey; apple sliced, ripe currants, &c. infused in boiling water; pleasant cooling drinks are also prepared from the currant and raspberry jam, rob of elder, tamarinds, &c. Small spirit of vitriol may also be used to acidulate drinks with, &c. in fevers of the putrescent or putrid kind, which may be readily compounded after the following recipe. Some physicians have given preference to spirit of salt (muriatic acid) in such cases.

Small Spirit of Vitriol.

Weigh four ounces of water, by troy weight, in an open vessel of glass or stone, to which add by drops, or in a fine stream, four drams (troy) of strong spirit or acid of vitriol.

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